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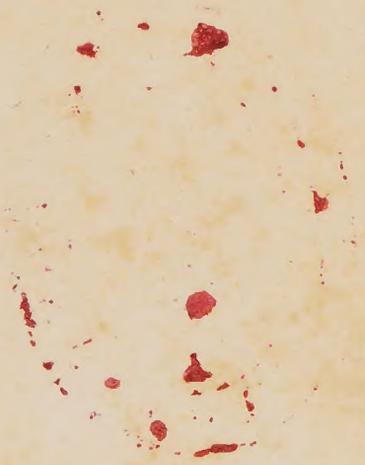

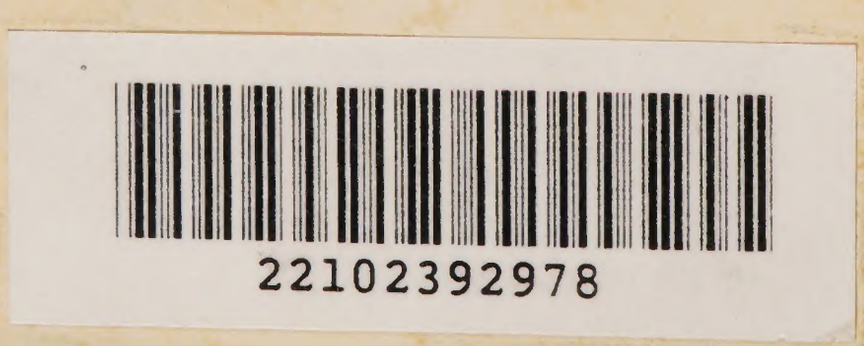

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3

THE

DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

EDITED BY

JOHN WILLIAM MOORE, B.A., M.D., M.Ch., Univ. Dubl.;

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THE DUBLIN JOURNAL

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MEDICAL SCIENCE.

CONTENTS.

THIRD SERIES, No. CXCIII.—JANUARY 2, 1888.

PART I.—ORIGINAL COMMUNICATIONS.

PAGE

ART. I.—Enterectomy and Enterorrhaphy. By J. S. M'ARDLE, F.R.C.S.I.; Surgeon to, and Lecturer on Surgery at, St. Vincent's Hospital, Dublin—(Illustrated), - - - - - - 1

ART. II.—The Treatment of Mammary Tumours. By JOHN FAGAN, F.R.C.S.I.; Surgeon to the Royal Hospital and Belfast Children's Hospital, - - - - - - - - - 13

ART. III.—Strangulated Hernia, with some Statistics and Remarks based upon the Result of Sixty Operations; also General Remarks relative to the Subject of Strangulated Hernia. By J. WALTON BROWNE, B.A., M.D.; Surgeon, Belfast Royal Hospital; Surgeon, Belfast Ophthalmic Hospital, - - - - - - 24

ART. IV.—Medical Education and Examinations in 1887. By JOHN WILLIAM MOORE, B.A., M.D., M.Ch., Univ. Dubl.; Fellow and Registrar of the King and Queen's College of Physicians, Ireland; Physician to the Meath Hospital, and Lecturer on Practice of Medicine in the Carmichael College of Medicine, Dublin; ex-Scholar of Trinity College, Dublin, - - - - - - 36

PART II.—REVIEWS AND BIBLIOGRAPHICAL NOTICES.

1. A Treatise on the Animal Alkaloids, Cadaveric and Vital; or the Ptomaines and Leucomaines, Chemically, Physiologically, and Pathologically considered in Relation to Scientific Medicine. By A. M. BROWN, M.D. With an Introduction by PROF. ARMAUD GAUTIER. On the Animal Alkaloids, the Ptomaines, Leucomaines, and Extractives, in their Pathological Relations; being a Short Summary of Recent Researches as to the Origin of some Diseases by or through the Physiological Processes going on during Life. By SIR WILLIAM AITKEN, M.D., F.R.S., - - - - - 47

PAGE

2. Recent Works on Vaccinia and Variola:—1. Vaccinia and Variola: a Study of their Life-history. By JOHN B. BUIST, M.D. 2. The Artificial Cultivation of Vaccine Lymph. Competition Essay for Grocers' Company, London. First Quadrennial Discovery Prize of £1,000, 1883–86. By JOHN DOUGALL, M.D., - - - 52
3. The Throat and its Diseases, including Associated Affections of the Nose and Ear. By LENNOX BROWNE, F.R.C.S.E. Second Edition. Re-written and Enlarged, - - - - - 55
4. Report by Collective Investigation Committee of the Norwegian Medical Association on the Etiology of Rickets, Acute Rheumatism, Chorea, Cancer, Urinary Calculus, - - - - 57
5. Army Medical Department Report for the Year 1885. Vol. XXVII., 59
6. The Principles and Practice of School Hygiene. By ALFRED CARPENTER, M.D., Lond.; C.S.S., Camb.; M.R.C.P., - - 63
7. On Fevers: their History, Ætiology, Diagnosis, Prognosis, and Treatment. By ALEXANDER COLLIE, M.D., Aberd., - - 63
8. Manual for the Physiological Laboratory. By VINCENT DORMER HARRIS, M.D., F.R.C.P., and D'ARCY POWER, M.B., F.R.C.S. Fourth Edition, - - - - - - - 64
9. Rupture of the Perinæum. By M. J. MOLONY, L.R,C.P., &c., - 65
10. An Abstract of Lectures on Lepra. By J. L. BIDENKAP, Physician to the Department for Skin Diseases at the Rigs-Hospital, - 65

PART III.—HALF-YEARLY REPORTS.

REPORT ON OPHTHALMIC SURGERY. By ARTHUR H. BENSON, M.A., F.R.C.S.I.; Ophthalmic and Aural Surgeon to the City of Dublin Hospital; Assistant Surgeon to St. Mark's Ophthalmic Hospital; Examiner in Ophthalmic Surgery to the Royal College of Surgeons:—

Action of Drugs, - - - - - - - 66
Ophthalmia Neonatorum, - - - - - - 67
Cataract Extraction, - - - - - - 68
Glaucoma, - - - - - - - 68
Albuminuric Retinitis, - - - - - - 70
Ocular Symptoms in Epilepsy, - - - - - 71
On the Unequal Width of the Pupil in Internal Diseases, - 73
Changes of the Field of Vision in Menstruation, - - - 73

PART IV.—MEDICAL MISCELLANY.

ROYAL ACADEMY OF MEDICINE IN IRELAND:—

SURGICAL SECTION.

The President's Address. By DR. A. H. CORLEY, - - 75
Trephining in Brain Disease. By MR. J. DALLAS PRATT, - 75
Serious Brain Symptoms following Pyæmia. By MR. MAYNE, - 75

MEDICAL SECTION.

A Case of Lymphadenoma. By DR. W. M. A. WRIGHT, - - 81
The Fever of Over-exertion. By DR. KNOTT, - - - 83

PAGE

SANITARY AND METEOROLOGICAL NOTES. Compiled by J. W. MOORE, B.A., M.D., Univ. Dubl.; F.K.Q.C.P.; F.R. Met. Soc.; Diplomate in State Medicine and ex-Sch. of Trin. Coll. Dubl.:—

Vital Statistics for Four Weeks ending Saturday, December 3, 1887, - - - - - - - - 86
Meteorology—Abstract of Observations made at Dublin for Month of November, 1887, - - - - - - 91

PERISCOPE:—

Cirrhosis of the Liver, with Contraction of the Fissure for the Vena Cava, - - - - - - - 46
Ligature of the Vertebral Artery, - - - - 74
A New Antiseptic, - - - - - - 74
Immediate Cure of Whooping-cough, - - - - 85
Potassium Permanganate in Amenorrhœa, - - - 85
The Late Dr. Wilson Fox, - - - - - 94
Death from Internal Hæmorrhage following the Introduction of an Aspirator Needle, - - - - - - 94
Treatment of Tuberculosis, - - - - - 94
Benign and Malignant Growths of the Larynx, - - - 95
Measles in a Patient Seventy Years of Age, - - - 96

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS:—

Pinol, - - - - - - - - 96

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THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

CONTENTS.

THIRD SERIES, No. CXCIV.—FEBRUARY 1, 1888.

PART I.—ORIGINAL COMMUNICATIONS.

PAGE

ART. V.—A Case of Cerebral Cyst. By KENDAL FRANKS, M.D., Univ. Dubl.; Fellow and Member of Council of the Royal College of Surgeons in Ireland; Fellow of the Royal Medical and Chirurgical Society of London; Surgeon to the Adelaide Hospital; ex-Scholar of Trinity College, Dublin, - - - - - 97

ART. VI.—A Case of Lymphadenoma. By WILLIAM M. A. WRIGHT, B.A., M.D., Univ. Dubl.; L.K.Q.C.P., - - - - - 106

ART. VII.—Our Hospitals and the Interests of Patients and Pupils. By E. D. MAPOTHER, M.D., President of the Dublin Branch of the British Medical Association, - - - - - - 110

ART. VIII.—Enterectomy and Enterorrhaphy. By J. S. M'ARDLE, F.R.C.S.I.; Surgeon to, and Lecturer on Surgery at, St. Vincent's Hospital, Dublin—(*continued and concluded*), - - - - 123

PART II.—REVIEWS AND BIBLIOGRAPHICAL NOTICES.

1. Report on Anæmia, or Beri-Beri, of Ceylon. By W. KYNSEY, F.K.Q.C.P.; Principal Civil Medical Officer and Inspector-General of Hospitals, Ceylon, - - - - - - - 138

2. Recent Works on Surgery:—1. Fairlie Clarke's Manual of the Practice of Surgery. Revised and partly rewritten by ANDREW CLARK, F.R.C.S. Eng., Assistant Surgeon, Middlesex Hospital. 2. Surgical Pathology and Morbid Anatomy. By ANTHONY A. BOWLBY, F.R.C.S. Eng., Demonstrator of Surgical Pathology at St. Bartholomew's Hospital. 3. Surgery, its Theory and Practice. By WILLIAM JOHNSON WALSHAM, F.R.C.S. Eng., Surgeon to St. Bartholomew's Hospital. 4. Illustrations of Clinical Surgery. By JONATHAN HUTCHINSON, F.R.S., LL.D., Consulting Snrgeon to the London Hospital. Parts XX. and XXI., - - - - 142

PAGE

3. Experimental Chemistry for Junior Students. By J. Emerson Reynolds, M.D., F.R.S. Part IV. Chemistry of Carbon Compounds; or, Organic Chemistry, - - - - - 145
4. Euthanasia; or, the Medical Treatment in Aid of an Easy Death. By William Munk, M.D., F.S.A, Fellow and late Censor of the Royal College of Physicians, &c., - - - - - 146
5. Recent Works on Meteorology:—1. Weather: a Popular Exposition of the Nature of Weather Changes from Day to Day. By the Hon. Ralph Abercrombie, Fellow of the Royal Meteorological Society, London; Member of the Scottish Meteorological Society, &c. 2. Weather Charts and Storm Warnings. By Robert H. Scott, M.A., F.R.S., Secretary to the Meteorological Council. Third Edition, revised and enlarged. 3. Journal of the Scottish Meteorological Society. Third Series. Vol. VII., Nos. 1, 2, and 3. 4. Report of the Meteorological Council to the Royal Society, for the Year ending 31st of March, 1886, - - - - 147
6. A Manual of Obstetrics. By A. F. A. King, M.D., - - 155
7. The Saliva as a Test for Functional Disorders of the Liver. By Samuel Fenwick, M.D., - - - - - - 156
8. Sur l'Ontogenèse du Cervelet. Par le Docteur E. Lahousse, - 157
9. Monthly International Journal of Anatomy and Physiology. Conducted, with the assistance of numerous other anatomists, by Professors Schäfer of London, Testut of Lyons, and Krause of Göttingen. Vol. V. No. 1, - - - - - 159
10. A Manual of Physiology, for the Use of Junior Students of Medicine. By Gerald F. Yeo, M.D. Second Edition, - - - 160
11. Gout and its Relations to Diseases of the Liver and Kidneys. By Robson Roose, M.D., F.C.S., F.R.C.P.Ed. Fourth Edition - 160
12. The Commoner Diseases and Accidents to Life and Limb—firstly, their Prevention; secondly, their Immediate Treatment. By M. H. Basil, M.A., M.B., C.M. Edin. - - - - - 161
13. The Management of Pregnancy, Parturition, and the Puerperal State, Normal and Abnormal. By Paul F. Munde, M.D., - 162
14. Bibliotheca Medico-Chirurgica, Pharmaceutico-Chemica, et Veterinaria. Herausgegeben von Gustav Ruprecht. 40 Jahrgang. Neue Folge, I. Jahrgang. Neue Folge, II. Jahrgang, 1 Heft. Januar-März, 1887. 2 Heft. April-Juni, 1887, - - - 162
15. Recent Works on Epidemics:—1. The Volcanic Origin of Epidemics. By John Parkin, M.D., F.R C.S., formerly H.M.'s Inspector for Cholera in the West Indies. Popular Edition. 2. Cholera and Water in India. By M. C. Furnell, M.D., F.R.C.S., C.I.E., Fellow of Madras University; late Surgeon-General and Sanitary Commissioner, Madras, &c., - - - - - 163
16. Debate in the House of Commons on the Grievances of the Indian Medical Service. Verbatim Extract from the *Times* of 19th July, 1884, - - - - - - - 165

PAGE

17. Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. Authors and Subjects. Vol. VIII. Legier-Medicine (Naval), - - - - - - 166

Part III.—HALF-YEARLY REPORTS.

Report on Midwifery and Diseases of Women. By Andrew J. Horne, Fellow and Examiner in Midwifery, King and Queen's College of Physicians; ex-Assistant-Physician to the Rotunda Hospital:—

Concerning the Advisability of Separating, in Point of Time, Version from Extraction (Winter), - - - - - 167
Peri-Uterine Hæmatocele, - - - - - 169

Part IV.—MEDICAL MISCELLANY.

Royal Academy of Medicine in Ireland:—

MEDICAL SECTION.

Argyriasis. By Dr. A. W. Foot, - - - - - 172
Cerebral Tumour. By Dr. Kendal Franks, - - - 173

Sanitary and Meteorological Notes. Compiled by J. W. Moore, B.A., M.D., Univ. Dubl.; F.K.Q.C.P.; F.R.Met.Soc.; Diplomate in State Medicine and ex-Sch. of Trin. Coll. Dubl.:—

Vital Statistics for Four Weeks ending Saturday, December 31, 1887, - - - - - - - - 181
Meteorology—Abstract of Observations made at Dublin for Month of December, 1887, - - - - - - 186
Rainfall in 1887, - - - - - - - 189

Periscope:—

Extirpation of a Large Lympho-Sarcoma of the Neck, with Section of the Common Carotid and Internal Jugular Vein, - - 171
The Insane in Italy, - - - - - - 171
The Canary Islands, - - - - - - 191
Cyclic Albuminuria, - - - - - - 192
Archives de Tocologie, - - - - - - 192
Tooth-ache Remedy, - - - - - - 192

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THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

CONTENTS.

THIRD SERIES, No. CXCV.—MARCH 1, 1888.

PART I.—ORIGINAL COMMUNICATIONS.

PAGE

ART. IX.—Congenital Spastic Paralysis and Ataxic Paraplegia. By C. J. NIXON, M.B., LL.D., Univ. Dubl.; M.D. (Hon. Causâ), R.U.I.; Professor of Practice of Medicine and Pathology, Catholic University; Senior Physician to the Mater Misericordiæ Hospital, 193

ART. X.—Remarks in relation to State Medicine. By CHARLES FREDERICK MOORE, M.D., F.R.C.S.I.; President of the Section of State Medicine in the Royal Academy of Medicine in Ireland, - 203

ART. XI.—The Medico-Legal Aspects of the Coachford Poisoning Case. By C. YELVERTON PEARSON, M.D., Q.U.I., F.R.C.S. Eng.; Professor of Materia Medica and Lecturer on Medical Jurisprudence, Queen's College, Cork; Fellow of the Royal Academy of Medicine in Ireland, - - - - - - 212

ART. XII.—Surgery of the Thyroid Gland. By GEORGE FOY, F.R.C.S.I.; Surgeon to the Whitworth Hospital, Drumcondra, - 239

PART II.—REVIEWS AND BIBLIOGRAPHICAL NOTICES.

1. Recent Periodicals:—Archives Roumaines de Médecine et de Chirurgie. Première Année, No. 2. Septembre, 1887. 2. The New Zealand Medical Journal. No. 1, Vol. I. September, 1887. 3. The Manitoba, Northwest, and British Columbia Lancet. No. 1, Vol. I., - - - - - - - - 244

2. Transactions of the New York State Medical Association for the Year 1886. Vol. III. Edited for the Association by ALFRED LUDLOW CARROLL, M.D., - - - - - 248

3. Intelligence in the Van; the Beginning of the Beginning, and the End of the End. By HORACE DOBELL, M.D., &c.; Fellow of the Royal Medical and Chirurgical Society; Fellow of the Royal Meteorological Society, - - - - - - 251

PAGE

4. A Handbook of Diseases of the Skin, with especial reference to Diagnosis and Treatment. By Robert Liveing, A.M. and M.D., Cantab.; F.R.C.P., Lond.; Physician to the Department for Diseases of the Skin at the Middlesex Hospital. Fifth Edition, revised and enlarged, - - - - - - - 252
5. The Practitioner's Handbook of Treatment, or the Principles of Therapeutics. By J. Milner Fothergill, M.D.; Physician to the City of London Hospital for Diseases of the Chest. Third Edition, enlarged, - - - - - - - 252
6. Transactions of the Association of American Physicians. Second Session. Held at Washington, D.C., June 2 and 3, 1887, - 253
7. Medical and Surgical Report of the Tyrone County Infirmary for 1886, - - - - - - - - 255
8. Ophthalmic Surgery. By Robert Brudenell Carter, F.R.C.S., and William Adams Frost, F.R.C.S., - - - - 256
9. The Refraction of the Eye. A Manual for Students. By Gustavus Hartridge, F.R.C.S. Third Edition, - - - - 258

Part III.—MEDICAL MISCELLANY.

Royal Academy of Medicine in Ireland:—

SECTION OF PATHOLOGY.

Bilateral Anophthalmos. By Mr. Neary, - - - 259
Congenital Microphthalmos. By Dr. Fitzgerald, - - 259
Infantile Paralysis. By Mr. Tobin, - - - - 262
The Pathology of Dysentery. By Mr. Conolly Norman, Dr. Walter G. Smith, Dr. Purser, and Dr. James Little, - 263

SECTION OF MEDICINE.

Nervous Diseases—Congenital Spastic Paraplegia; Ataxic Paraplegia. By Dr. C. J. Nixon, - - - - - 265
Heredity in Hæmorrhagic Purpura. By Dr. J. F. Knott, - 267

SECTION OF STATE MEDICINE.

The President's Address. By Dr. C. F. Moore, - - - 268
The Medico-Forensic Aspects of the Coachford Poisoning Case. By Dr. C. Yelverton Pearson, - - - - 268

Clinical Records:—

A Case of Carcinoma Gastri. Reported by Mr. Alfred F. Penny, - - - - - - - 273

Sanitary and Meteorological Notes. Compiled by J. W. Moore, B.A., M.D., Univ. Dubl.; F.K.Q.C.P.; F.R. Met. Soc.; Diplomate in State Medicine and ex-Sch. of Trin. Coll. Dubl.:—

Vital Statistics for Four Weeks ending Saturday, January 28, 1888, - - - - - - - - 278
Meteorology—Abstract of Observations made at Dublin for Month of January, 1888, - - - - - - 283

PERISCOPE:—

PAGE

Montreal Victoria Hospital, - - - - - 243
Stenocarpin, - - - - - - - 258
External Urethrotomy with Retrograde Catheterisation, - - 272
Protracted Gestation, - - - - - - 272
Porpoise Oil, - - - - - - - 286
Gaseous Enemata in Phthisis, - - - - - 286
The William F. Jenks Memorial Prize, - - - - 287
Der Siebente Congress für innere Medicin, - - - 287
Strophanthus, - - - - - - - 288
The Bromo-Iodine Waters of Woodhall Spa, Lancashire, - - 289
Progressive Spastic Ataxia (Combined Fascicular Sclerosis) and the Combined Scleroses of the Spinal Cord, - - - 290
Examination of Candidates for Her Majesty's Indian and Naval Medical Services, - - - - - - 291

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Professor of Obstetrics and Diseases of Women
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THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

CONTENTS.

THIRD SERIES, No. CXCVI.—APRIL 2, 1888.

PART I.—ORIGINAL COMMUNICATIONS.

PAGE

ART. XIII.—Note on Silver-staining (Argyria). By ARTHUR WYNNE FOOT, M.D., Univ. Dubl.; Senior Physician to the Meath Hospital; Vice-President of the King and Queen's College of Physicians in Ireland; Professor of the Practice of Medicine, Royal College of Surgeons in Ireland; Fellow of the Royal Academy of Medicine in Ireland; Diplomate in State Medicine, Trinity College, Dublin, - 293

ART. XIV.—On the Treatment of Sterility and Obstructive Dysmenorrhæa. By THOMAS MORE MADDEN, M.D., F.R.C.S. Ed.; Obstetric Physician to the Mater Misericordiæ Hospital, Dublin; President-Elect, Obstetric Section, British Medical Association; Ex-President, Section of Obstetrics, Royal Academy of Medicine in Ireland; Physician to St. Joseph's Hospital for Sick Children; Formerly Vice-President, British Gynæcological Society; and Examiner in Obstetrics and Gynæcology, Queen's University, &c., 297

ART. XV.—Œsophagotomy. By J. S. M'ARDLE, Fellow, Royal College of Surgeons; Fellow of the Royal Academy of Medicine in Ireland; Surgeon and Lecturer on Surgery, St. Vincent's Hospital—(Illustrated), - - - - - - - 310

PART II.—REVIEWS AND BIBLIOGRAPHICAL NOTICES.

1. Pulmonary Consumption, its Etiology, Pathology, and Treatment. By C. J. B. WILLIAMS, M.D., LL.D., F.R.S., and CHARLES THEODORE WILLIAMS, M.A., M.D. Oxon. Second Edition. Enlarged and Re-written by DR. C. THEODORE WILLIAMS, - - 316

2. Beiträge zur pathologischen Anatomie und Physiologie. Herausgegeben von DR. ERNST ZIEGLER und DR. C. NAUWERCK. Zweiter Band. Zweites Heft., - - - - - - 326

3. Transactions of the Academy of Medicine in Ireland. Vol. V. Edited by W. THOMSON, M.A., F.R.C.S., General Secretary; Surgeon to the Richmond Hospital, Dublin, - - - 329

PAGE

4. Lectures on Certain Diseases of the Jaw. Delivered at the Royal College of Surgeons of England, 1887. By CHRISTOPHER HEATH, F.R.C.S., - - - - - - - - - 331
5. A Short Manual of Surgical Operations. By ARTHUR E. BARKER, F.R.C.S.; Surgeon to University College Hospital; Assistant Professor of Clinical Surgery in University College, London, - 333
6. Outlines of Practical Physiology: being a Manual for the Physiological Laboratory, including Chemical and Experimental Physiology, with reference to Practical Medicine. By WILLIAM STIRLING, M.D., Sc.D., - - - - - - - - 334
7. Comments on the Report of the Committee on M. Pasteur's Treatment of Rabies and Hydrophobia. By SURGEON-GENERAL C. A. GORDON, M.D., C.B., - - - - - - - 336
8. The Annual Report of the Carlow County Infirmary for the Year 1887, - - - - - - - - - 337
9. Stricture of the Urethra; its Diagnosis and Treatment facilitated by the use of New and Simple Instruments. By E. DISTIN-MADDICK, F.R.C.S. Edin., - - - - - - 338
10. Are Epidemics Contagious? By JOHN PARKIN, M.D., - - 339
11. On Abdominal Section for the Treatment of Intra-Peritoneal Injury. By SIR WILLIAM MACCORMAC, F.R.C.S., - - - 340
11. Royal University of Ireland. The Calendar for the Year 1888, - 341
12. An Index of Surgery. Being a Concise Classification of the Main Facts and Theories of Surgery, for the Use of Senior Students and Others. By C. B. KEETLEY, F.R.C.S. Fourth Edition, - - 342
13. The Year-Book of Treatment for 1888. A Critical Review for Practitioners of Medicine and Surgery, - - - - - 343
14. Dictionary of Terms used in Medicine and the Collateral Sciences. By the late RICHARD D. HOBLYN, M.A. Oxon. Eleventh Edition. Revised throughout, with numerous additions, by JOHN A. P. PRICE, B.A., M.D. Oxon., - - - - - - 344
15. Revue Médico-Pharmaceutique.] Autorisée par Iradé Impérial. Première Année. No. 1, - - - - - - - 345
16. Biliousness: its Causes, and its Rational Treatment. By ADOLPHUS E. BRIDGER, B.A., M.D., F.R.C.P., - - - - - 346

PART III.—HALF-YEARLY REPORTS.

REPORT ON MIDWIFERY AND DISEASES OF WOMEN. By ANDREW J. HORNE, Fellow and Examiner in Midwifery, King and Queen's College of Physicians; ex-Assistant-Physician to the Rotunda Hospital—(*concluded*):—

Ruptured Tubal Pregnancy, - - - - - 347
Treatment of Endometritis, - - - - - 348
Remarks on the Technique of Vaginal Hysterectomy, - - 349
The Treatment of Retroflexion of the Uterus with Adhesions, - 351

Part IV.—MEDICAL MISCELLANY.

PAGE

Royal Academy of Medicine in Ireland:—

SECTION OF OBSTETRICS.

Exhibitions. By Dr. Atthill, Mr. A. J. Horne, and Dr. Macan, 353
Uterine Hæmorrhage of Five Years' Standing, caused by an Enlarged and Cystic Ovary; Removal of Ovary; Recovery. By Dr. M'Mordie, - - - - - - 354
Pudendal Hæmatocele. By Mr. Horne, - - - - 356

SECTION OF SURGERY.

Penetrating Wound of Stomach and Transverse Meso-colon successfully treated by Abdominal Section. By Dr. Charles Ball, 357
Foreign Body in the Œsophagus. By Mr. Thomson, - - 359

SECTION OF PATHOLOGY.

Outbreak of Dysentery. By Mr. Conolly Norman, - - 362
Case of Cerebro-Spinal Disease. By Mr. Bernard, F.K.Q.C.P., 364
Suicidal Wound of the Heart with a Pin. By Mr. Wm. Thomson, 365
Multiple Abscesses of the Liver and Lungs, By Dr. Finny, - 367

Sanitary and Meteorological Notes. Compiled by J. W. Moore, B.A., M.D., Univ. Dubl.; F.K.Q.C.P.; F.R. Met. Soc.; Diplomate in State Medicine and ex-Sch. of Trin. Coll. Dubl.:—

Vital Statistics for Four Weeks ending Saturday, February 25, 1888, - - - - - - - - 370
Meteorology—Abstract of Observations made at Dublin for Month of February, 1888, - - - - - - 375

Periscope:—

Horny Growth of Penis, - - - - - - 315
Blisters in Infancy, - - - - - - 346
Alcohol in High Latitudes, - - - - - 352
Treatment of Typhoid Fever, - - - - - 369
Infantile Diarrhœa, - - - - - - 378
Accidents attending Aspiration, - - - - - 379
Iodoformised Ether, - - - - - - 379
Rabies, - - - - - - - - 379
Ustilagin, - - - - - - - - 379
Sarcoma, - - - - - - - - 379
Pyrogallic Acid in Epithelioma, - - - - - 380
Bleeding in Sunstroke, - - - - - - 380
Deaths from Alcohol, - - - - - - 380
Suicide in the Cocaïn Habit, - - - - - 380
Tolerance of Drugs, - - - - - - 380
Cocaïn in Zoster and Pruritus Ani, - - - - 380

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THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

CONTENTS.

THIRD SERIES, No. CXCVII.—MAY 1, 1888.

PART I.—ORIGINAL COMMUNICATIONS.

PAGE

ART. XVI.—Note on the Principle of Flap-splitting in Plastic Operations: a Recognition of Priority on the part of the late Maurice Collis. By LAWSON TAIT, F.R.C.S., Professor of Gynæcology, Queen's College, Birmingham, - - - - - 381

ART. XVII.—A Case of Gastric Epilepsy. By ARTHUR WYNNE FOOT, M.D., Univ. Dubl.; Senior Physician to the Meath Hospital; Vice-President of the King and Queen's College of Physicians in Ireland; Professor of the Practice of Medicine, Royal College of Surgeons in Ireland; Fellow of the Royal Academy of Medicine in Ireland; Diplomate in State Medicine, Trinity College, Dublin, - 384

ART. XVIII.—Report of the Gynæcological Department of the Rotunda Lying-in Hospital, Dublin, for the year ending November 3, 1887. By ALFRED J. SMITH, M.B., M.Ch., M.A.O., R U.I.; Assistant Physician to the Rotunda Lying-in Hospital, Dublin, - - 392

ART. XIX.—Glengarriff as a Winter Health-Resort. By D. EDGAR FLINN, F.R.C.S.I., M.K.Q.C.P.I.; Examiner in Public Health, Royal College of Surgeons in Ireland; Surgeon to St. Michael's Hospital, Kingstown; Fellow of the Royal Academy of Medicine in Ireland; late Medical Officer of Health, East Staffordshire, &c., - 401

ART. XX.—The Springs and Baths of Ems. By F. J. B. QUINLAN, M.D., F.K.Q.C.P., M.R I.A., - - - - - 408

PART II.—REVIEWS AND BIBLIOGRAPHICAL NOTICES.

1. Dental Caries, and the Prevention of Dental Caries. A Series of Papers reprinted from the Journal of the British Dental Association. By HENRY SEWILL, M.R.C.S. and L.D.S., Eng. Second Edition, - - - - - - - - - 413

2. Some Periodicals:—1. Medical Communications of the Massachusetts Medical Society. Vol. XIV., No. 1. 2. Transactions of the Medical and Chirurgical Faculty of the State of Maryland. Eighty-ninth Annual Session, held at Baltimore, Md. 3. Trans-

PAGE

actions of the New York Academy of Medicine. Volume V. 4. Twenty-third Report of the Trustees of the City Hospital, Boston, with Reports of the Superintendent and Professional Staff, Rules for Admissions and Discharges, Prospectus of Training School for Nurses, &c. 5. The Middlesex Hospital. Reports of the Medical, Surgical, and Pathological Registrars for the Year 1886. 6. Thirteenth Annual Report of the London Temperance Hospital, presented May 27, 1886. 7. The Ceylon Medical Journal, Nos. 1 and 2. 8. Annali Clinici dell' Ospedale degl' Incurabili in Napoli, Giornale de Medicina e Chirurgia. Redatto per cura dei Professori Biondi G., de Giacomo A., Frusci F., Fazio F., Olivieri C., Senise T. 9. St. Louis Courier of Medicine. 10. The Polyclinic: a Monthly Journal of Medicine and Surgery. Conducted by the Faculty of the Philadelphia Polyclinic and College for Graduates in Medicine. Henry Leffmann, M.D., Editor-in-Chief. 11. The Sacramento Medical Times. Edited by James H. Parkinson. 12. Bullettino della Reale Accademia Medica di Roma. Compilato dai Consiglieri Accademici delegati per la stampa. Prof. O. Colasanti e Prof. E. Marchiafava. 13. The Brooklyn Medical Journal. Vol. I., Nos. 2 and 3. 14. The Journal of the American Medical Association. Editor, N. S. Davis, M.D., LL.D., Chicago. 15. The Medical and Surgical Reporter. Edited by Charles W. Dulles, M.D., Philadelphia. 16. Gazette Hebdomadaire de Médecine, Paris. 17. La Riforma Medica, Giornale Internazionale Quotidiano di Medicina, Chirurgia, Farmacia, Veterinaria e Scienzi affini. Redattore-capo Prof. Cav. Gaetano Rummo, - - - - - - - - - 416

3. Bombay Materia Medica and their Therapeutics. By Rustomjee N. Khory, M.D., Brux., - - - - - - 425

4. On the Tapetum Lucidum and the Functions of the Fourth Pair of Nerves. By Henry Lee, - - - - - - 426

5. An Introduction to Practical Organic Analysis; adapted to the Requirements of the First M.B. Examination. By George E. R. Ellis, of University College, London; Science Master of Haversham Grammar School, - - - - - - - 426

6. The Medical Annual and Practitioner's Index; a Work of Reference for Medical Practitioners. 1888. Sixth Year, - - - 427

7. Medical Galvinism; an Introductory Lecture delivered to Nurses and Masseuses. By Herbert Tibbits, M.D., - - - 428

8. De L'Épilepsie Jacksonienne. Par le Dr. E. Roland, Médecin des Asiles "John Bost," de Laforce (Dorgogne), - - - 429

Part III.—HALF-YEARLY REPORTS.

Report on Forensic Medicine. By H. C. Tweedy, M.D., Univ. Dubl.; M.K.Q.C.P.; Diplomate in State Medicine, Trin. Coll. Dubl.; Fellow and Examiner, Royal College of Surgeons; Physician to Steevens' Hospital:—

Anatomic Changes of the Brain in Senile Dementia, - - 430
Puerperal Insanity, - - - - - - 431
Suicide in Relation to Insanity and Life Assurance, - - 433
Hermaphrodism, - - - - - - - 435
The Post-mortem Imbibition of Poisons, - - - - 435
Poisoning by Cocaïn, - - - - - - 436

PAGE

Part IV.—MEDICAL MISCELLANY.

Royal Academy of Medicine in Ireland:—

SECTION OF SURGERY.

The Treatment of Advanced Conditions of Equino-Varus. By Mr. Swan, - - - - - - - 438
The Surgery of the Thyroid Gland. By Mr. Foy, - - 440

SECTION OF MEDICINE.

Case of Pneumo-Thorax Exhibited. By Dr. Walter G. Smith, 442
The Ætiology and Classification of the Anæmia of Puberty. By Dr. E. MacDowel Cosgrave, - - - - 442
Gastric Epilepsy. By Dr. A. W. Foot, - - - - 445

SECTION OF STATE MEDICINE.

The Distribution of Enteric Fever in the City of Dublin. By Dr. Grimshaw and Sir Charles Cameron, - - - 447
Hypnotism. By Mr. G. M. Foy, - - - - 450
Glengarriff as a Winter Health Resort. By Mr. Edgar Flinn, - 451

Cyclopia. An Abstract from the Danish of Professor Hannover, M.D., of Copenhagen. By J. F. Knott, M.B., - - - 454

Sanitary and Meteorological Notes. Compiled by J. W. Moore, B.A., M.D., Univ. Dubl.; F.K.Q.C.P.; F.R.Met. Soc.; Diplomate in State Medicine and ex-Sch. of Trin. Coll. Dubl.:—

Vital Statistics for Four Weeks ending Saturday, March 24, 1888, - - - - - - - - 465
Meteorology—Abstract of Observations made at Dublin for Month of March, 1888, - - - - - - 470

Periscope:—

Enteric Fever in a Man Sixty-one Years of Age, - - - 412
An Experimental Study of the Effects of Puncture of the Heart in Cases of Chloroform Narcosis, - - - - - 429
Physics of Male Urethra, - - - - - - 437
Coin in the Larynx, - - - - - - 464
Fistula in Ano, - - - - - - - 473
Mistletoe (Viscum Album), - - - - - 474
Congress of American Physicians and Surgeons, - - - 474
Two Cases of Fracture of the Body of the Scapula, - - 475
Mortality of Babies, - - - - - - 475
Conditions of the Hand and Arm which Interfere with the Performance of Professional Acts, especially with Piano-playing, - 476
Infantile Dyspepsia, - - - - - - 476
Sodium Phosphate in Infantile Diarrhœa, - - - 476
Ointment for Syphilitic Rashes, - - - - - 476

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THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

CONTENTS.

THIRD SERIES, No. CXCVIII.—JUNE 1, 1888.

PART I.—ORIGINAL COMMUNICATIONS.

PAGE

ART. XXI.—On Supra-pubic Lithotomy and Vesical Suture. By KENDAL FRANKS, M.D., Univ. Dubl.; Fellow and Member of Council of the Royal College of Surgeons in Ireland; Fellow of the Royal Medical and Chirurgical Society of London; Surgeon to the Adelaide Hospital; ex-Scholar of Trinity College, Dublin—(Illustrated), - - - - - - - - 477

ART. XXII.—Note on the Relief of Migranous Headache. By JAMES LITTLE, M.D.; President of the King and Queen's College of Physicians in Ireland; Physician to the Adelaide Hospital, - 489

ART. XXIII.—Note on the Power of Saccharin in Preventing Ammoniacal Change in Urine in Chronic Cystitis. By JAMES LITTLE, M.D.; President of the King and Queen's College of Physicians in Ireland; Physician to the Adelaide Hospital, - - - 493

ART. XXIV.—Note on the Classification of Skin Diseases, with a Case of Pemphigus Foliaceus treated by Ichthyol. By G. E. J. GREENE, L.K.Q.C.P., &c.; Medical Officer, Ferns District, and late Admiralty Surgeon, Kilmore, Co. Wexford, - - - - 495

PART II.—REVIEWS AND BIBLIOGRAPHICAL NOTICES.

1. Diseases of the Bones: their Pathology, Diagnosis, and Treatment. By THOMAS JONES, F.R.C.S. Eng.; B.S. London; Surgeon to the Manchester Royal Infirmary; Lecturer on Practical Surgery in the Owens College, Victoria University; Consulting Surgeon to the Children's Hospital, Pendlebury, Manchester, - - - 498

2. Watts' Dictionary of Chemistry. Revised and entirely rewritten by H. FORSTER MORLEY, M.A., D.Sc., Fellow of, and late Assistant Professor of Chemistry in, University College, London; and M. M. PATTISON MUIR, M.A., Fellow and Prælector in Chemistry of Gonville and Caius College, Cambridge; assisted by eminent Contributors. In Four Volumes. Vol. I., - - - 501

PAGE

3. Report on the Mortality and Vital Statistics of the United States, as returned at the Tenth Census (June, 1880). By JOHN S. BILLINGS, Surgeon, U.S. Army. Part II., - - - - - 504

PART III.—HALF-YEARLY REPORTS.

REPORT ON NERVOUS AND MENTAL DISEASE. By RINGROSE ATKINS, M.A., M.D.; Resident Medical Superintendent, District Lunatic Asylum, Waterford:—

1. Insanity in General, - - - - - - 507
2. Neuro-Anatomy and Physiology, - - - - 512

PART IV.—MEDICAL MISCELLANY.

ROYAL ACADEMY OF MEDICINE IN IRELAND:—

SECTION OF OBSTETRICS.

The Hymen as a Proof of Virginity. By DR. KINKEAD, - - 521

Case of Vaginal Extirpation of the Uterus, in which both Ureters were tied. By DR. A. V. MACAN, - - - - 526

SECTION OF SURGERY.

On Supra-pubic Lithotomy and Vesical Suture. By MR. KENDAL FRANKS, - - - - - - - 532

Supra-pubic Lithotomy. By MR. F. ALCOCK NIXON, - - 532

Vesical Tumour removed by Supra-pubic Cystotomy. By DR. HEUSTON, - - - - - - - 533

SECTION OF MEDICINE.

Note on the Relief of Migranous Headache. By DR. JAMES LITTLE, - - - - - - - 539

Note on the Use of Saccharin in Chronic Cystitis. By DR. JAMES LITTLE, - - - - - - - 542

Note on a Rare Form of Mental Disease. By MR. CONOLLY NORMAN, - - - - - - - 542

SANITARY AND METEOROLOGICAL NOTES. Compiled by J. W. MOORE, B.A., M.D., Univ. Dubl.; F.K.Q.C.P.; F.R. Met. Soc.; Diplomate in State Medicine and ex-Sch. of Trin. Coll. Dubl.:—

Vital Statistics for Four Weeks ending Saturday, April 21, 1888, - - - - - - - - 545

Meteorology—Abstract of Observations made at Dublin for Month of April, 1888, - - - - - - 550

Climatological Tables for the City of Dublin, - - - 554

PAGE

PERISCOPE:—

Dislocation of the Scapula, - - - - - 497
Intussusception relieved by Hydrostatic Pressure, - - 506
A Physiological Basis for an Improved Cardiac Pathology, - 520
Dangers of Intubation of the Larynx, - - - - 544
Poisoning with One Grain of the Sulphate of Atropin, - - 553
Passage of a Fractured Coccyx per Anum, - - - 555
The British Laryngological and Rhinological Association, - 556
Abdominal Section for Perforated Typhoid Ulcer, - - 556
Mezzotint Portraits of Eminent Physicians and Surgeons, - 557
An Analysis of Ninety-three Cases of Writers' Cramp and Impaired Writing Power; making, with Seventy-five Cases previously Reported, a Total of One Hundred and Sixty-eight Cases, - 557
Diarrhœa of Babies, - - - - - - 558
Tumours of the Larynx, - - - - - - 558

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS:—

Soluble Saccharin, - - - - - - 559
Tabloid Triturates, - - - - - - 559
Zyminised Suppositories for Rectal Feeding, - - - 559
Concentrated Liquors, - - - - - - 560

INDEX TO THE EIGHTY-FIFTH VOLUME, - - - - 561

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OF

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JANUARY 2, 1888.

PART I.

ORIGINAL COMMUNICATIONS.

ART. I.—*Enterectomy and Enterorrhaphy.* By J. S. M'ARDLE, F.R.C.S.I.; Surgeon to, and Lecturer on Surgery at, St. Vincent's Hospital, Dublin.

THE infrequency of operations for the removal of portions of the intestinal tract is not accounted for by the want of opportunities and necessities for putting into practice a well-established and reliable means of dealing with affections which, in the absence of surgical interference, render patients extremely miserable, or produce fatal results. I have witnessed the fatal ending of many cases in which a carefully conducted enterectomy and suture would have offered a fair chance of recovery. The following is a case in which several pieces of the small intestine have been successfully removed:—

CASE.—P. R., aged sixteen years, came under my care in St. Vincent's Hospital on November 15th, 1886.

Previous History.—In the December of 1885, after jumping from a cart on to a paved road-way, he experienced very severe pain in the right inguinal region, which necessitated his removal to bed, where he remained for three weeks. During this time he suffered from intense pain over the right inguinal region, extending upwards and inwards to umbilicus. Under treatment the pain subsided, and early in the fourth week he was allowed up; but pain coming on with increased severity, he was obliged to return to bed, where he remained until May, 1886, when he went to the country. In the end of May he was obliged to again seek surgical aid in Dublin, as he found a small painful swelling appearing above the

middle of the iliac crest. This swelling was poulticed for fourteen days. On incision it discharged a mixture of fæces, pus, and blood. The wound closed and swelling reappeared, and opened spontaneously, giving exit to fœtid pus. This discharge continued, but the intense abdominal pain disappeared. In October, 1886, he experienced a slight return of the pain, and after a few days the discharge, which had decreased, came freely again, but stained with bile. About this time he suffered greatly from cramps in right leg and severe pain running from groin to knee.

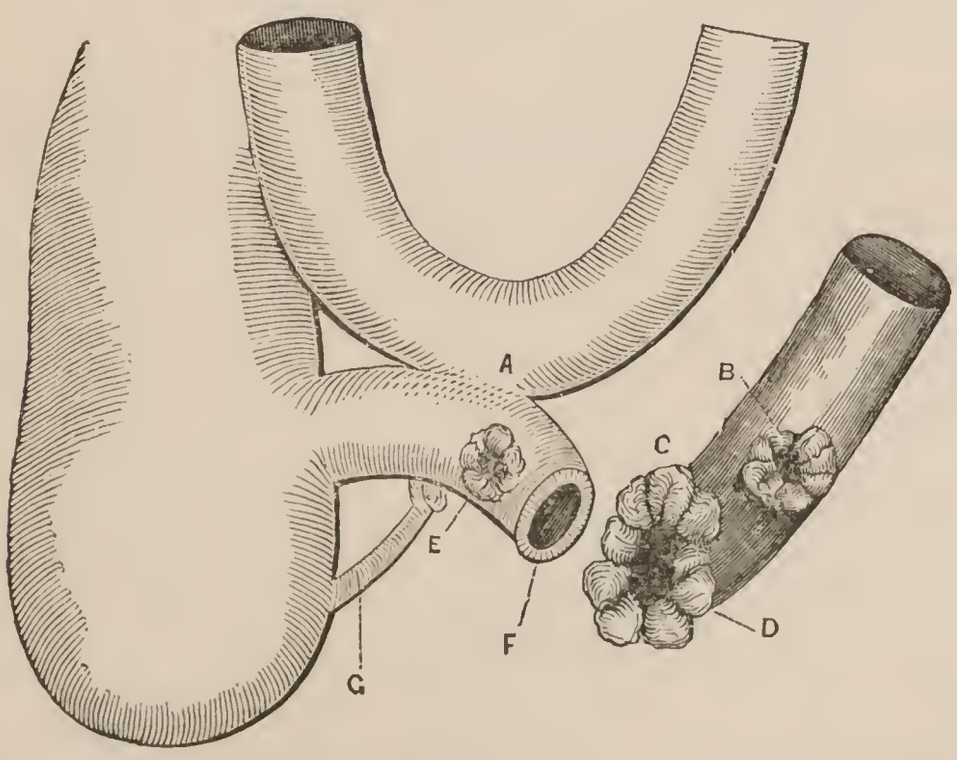
Condition on Admission.—He was pale and emaciated; face drawn and anxious; pupils dilated; pulse, 120; temperature sub-normal; feet and hands cold and clammy; urine normal in amount and appearance; no albumen; tongue coated with white fur; occasional vomiting of bile-stained fluid. He suffered from constipation, and complained of severe pain passing from right groin down thigh as far as knee. Right leg and thigh were greatly wasted. Above the middle of the iliac crest I found a fistula capable of admitting the point of the little finger, and leading into the right iliac fossa. Along this a probe passed readily as far as the edge of the true pelvis. A slight swelling appeared above the outer three-fourths of Poupart's ligament, and backwards to fistulous opening. It was semi-elastic, dull on percussion, and extended towards umbilicus. The fistula discharged large amounts of curdy pus, containing all the solid particles of his food, and having a yellow colour and sour odour. He weighed on admission 6 st. 5 lbs.

On December 12th I made an incision along the iliac crest, five inches in length, and removed there through a large amount of fungous granulation tissue, scraping the iliac fossa with Volkmann's scoop. I laid in a very large drainage tube, applied antiseptic dressings, and had the patient removed to the ward. Nutrient enemata were administered, and he was not allowed anything by the mouth. The dressings were changed on the third day, and the discharge was found to be very slight and a mixture of pus and blood. For three weeks he was kept in the recumbent posture and nourished by enemata. In the fourth week he was allowed liquids by the mouth, and, as no discharge occurred from the fistula, the enemata were now discontinued, and the patiient was allowed up. In a few days he was able to go to the Convalescent Home at Linden, where he rapidly increased in weight and strength, until, while making some violent exertion, he felt a severe pain in his side; and when the time for dressing the wound came it was found that the peat-moss pad was covered with the bile-stained contents of the intestine. The discharge now increased. The tract from the intestinal opening to the skin-wound discharged pus in considerable amount. Under this strain his health again failed, and he came under my care in St. Vincent's, where, after washing out the sinus and again enforcing rest and using rectal nourishment, the discharge decreased and his strength improved. My object

in this second attempt at strengthening him was to have him fit for operation, the steps of which I shall now detail, remarking, however, beforehand that this operation was not undertaken until the patient and his friends, seeing the miserable condition in which the fistula kept him, insisted on my vigorous interference. Placing before them the most gloomy picture of his prospect, I proceeded as follows, on March 10, 1887:—

An incision was made seven inches in length, extending from about two inches above the anterior superior spine of the ilium obliquely downwards and inwards to one and a half inches above the middle of Poupart's ligament. The incision was carried down to the peritoneum, which was pushed inwards and upwards, so that I might discover the orifice in the bowel. Here I had some difficulty; the tissues were infiltrated with fungous granulation material, and sinuses burrowed in all directions, so that it was impossible to determine the exact seat of the fistula. To solve the difficulty I introduced a mixture of dilute carbolic solution and milk into the bowel by means of a siphon, and, after a considerable amount had entered, I discovered a large stream passing into the iliac fossa at its innermost part; and examining this region carefully, I detected an orifice capable of admitting the index finger readily, and, seeing that no extra peritoneal operation could be of service, I incised the peritoneum along the line of abdominal wound, having first passed a large drainage tube through the anterior wound and out at the opening above the crest. This served to draw away the milky fluid, which continued to pour from the fistula.

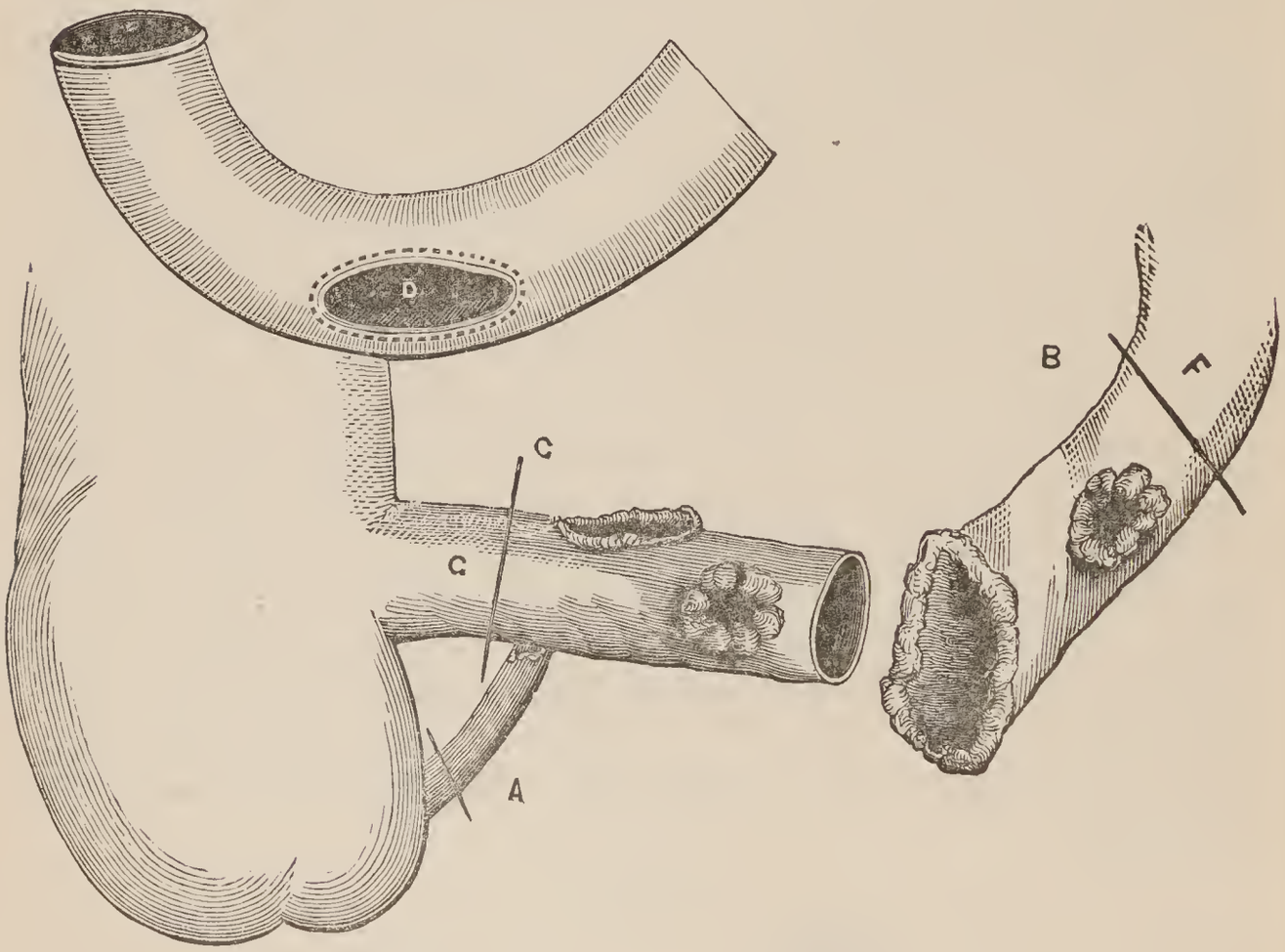
Fig. 1.



On opening the peritoneum I found a coil of small intestine lying in front of the cæcum, which was distended and fixed to the ileum, opposite the attachment of the vermiform appendix, as depicted at A, Fig. 1. On raising

this coil of intestine, and separating it from the ileum with the handle of a scalpel, it was found that an opening existed between the two coils at the point of attachment at A, Fig. 1. Bringing the perforated part of intestine, D, Fig. 2, through the wound, I resected an elliptical ring from

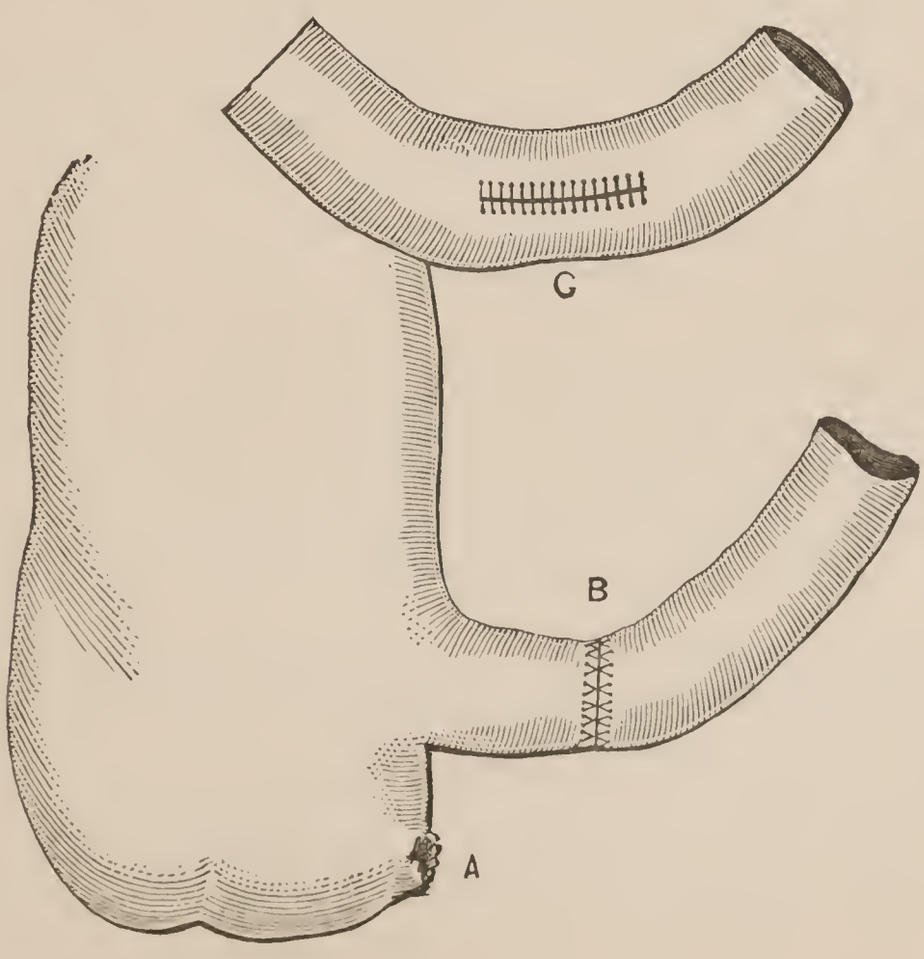
Fig. 2.



the margin of the perforation, shown by the dotted line round D, Fig. 2, closing the wound thus refreshed with Lembert suture, as at C, Fig. 3. I pressed the coil (which was slightly narrowed by the suturing) upwards into the abdomen, and retaining it there with a large flat sponge I examined the cæcum, and found it healthy. The vermiform appendix was imbedded in a mass of tissue which I discovered binding down the ileum to the pelvic wall. I removed the appendix near the base, as at A, Fig. 2, and, inverting the edges, closed the opening by three Lembert sutures. The ileum was firmly fixed to the edge of the true pelvis, and on examining this coil of intestine carefully I found that the bowel was extensively diseased. Six inches from the cæcal valve a perforation existed, as at B, Fig. 1, capable of admitting the handle of the scalpel, and from this a channel existed through fungous tissue into the false pelvis; half an inch nearer the valve the ileum was completely severed, as at C, Fig. 1, its proximal part, which was enlarged, opening by a trumpet-shaped orifice, capable of admitting two fingers, into a large irregular channel leading to the lumbar fistula. The mucous membrane

was greatly thickened and everted, and thrown into radiating folds, as shown at D, Fig. 1. The piece of ileum remaining attached to the large intestine was very firmly fixed to the pelvic wall, and two inches and a half from the valve a lateral opening existed in it, as at E, Fig. 1, capable of admitting one finger. The mucous membrane protruded through this opening, and presented as a fringe on the outside of the bowel. The opening of the small piece of ileum, represented at F, Fig. 1, was very narrow; the mucous membrane did not project through it, as at D. This was the most adherent part of the intestine, and to its lower border, as shown in Fig. 2, the vermiform appendix was attached. I now broke down the adhesions which bound the diseased parts to the edge of the pelvis, securing vessels with forceps, and raising the proximal end of the ileum to the wound, I ligatured the mesenteric vessels by passing an aneurysm needle with a double catgut ligature under them. I then cut the mesentery between the ligatures, and severed the bowel one inch from the lateral opening, as at B, Fig. 2. A similar process was adopted with the mesentery of the distal portion of the ileum, which I removed one inch from the ileo-cæcal valve, as at C, Fig. 2. I now closed the mesenteric notch, brought the parts F and G together with deep and superficial catgut suture (Czerny-Lembert), and, thoroughly cleansing the parts, closed the abdominal wound with deep and superficial suture, as at B, Fig. 3, and passed a large drainage-tube from its upper angle

Fig. 3.



out through the opening above the iliac crest. The wound was sprinkled with iodoform and the ordinary carbolic dressing applied, a peat moss pad being placed over the neighbourhood of the fistula. The operation was conducted under the spray, and in the theatre, at a temperature of 70°.

Immediately after operation the patient was removed to the small ward off the theatre, and a rectal injection of egg, beef-tea, and liq. pancreas (Earl) administered. In half an hour afterwards he had $\frac{1}{4}$ gr. of morphin hypodermically. His temperature in the evening was 99·2°. At 6 30 he was dozing quietly. At 10 30 p.m. a second nutrient enema was administered. At 3 a.m. on the 11th another, and also a hypodermic of $\frac{1}{4}$ gr. morphin. At 10 a.m. on the 11th the note is—"Slept for six hours during the night; passed water twice since operation; temperature, 98·2°; pulse, 132; tongue moist, with soft white fur at base; slight pain in abdomen, which is distended and tympanitic." Three enemata were given during the day and two hypodermics of morphin. In the evening the temperature was 98°; pulse, 130, very feeble. At 11 p.m. enema, as before-mentioned, with the addition of a dessert-spoonful of brandy, is given, which is retained, and morphin is administered, as on previous night.

12th.—Slept well during the night; pulse 120, weak and compressible. Suffered from vomiting of clear acid fluid stained with bile. This greatly distressed him. A mustard leaf was applied to the epigastrium, and a small dose of dilute hydrocyanic and sulphuric acids was administered, which effectually stopped this unfavourable symptom. He complained of severe pain over wound, extending towards umbilicus.

13th.—Slept five hours; no vomiting; pain in abdomen much less; tenderness still present; no motion from bowels. Enemata continued, and morphin. Pulse, 130; temperature, 97°.

14th.—Wound dressed, alternate sutures removed; slight discharge of pus from fistula and from drainage-tube in wound; no vomiting; slight motion from bowels, and discharge of flatus. The patient called my attention to a swelling above the line of incision, which disappeared before each escape of flatus, and as it was disappearing he experienced a sharp pain deep in the wound. Pulse, 100; temperature, 98·2°.

15th.—Slept well during night; copious motion from bowels; no vomiting; abdomen flat; tenderness much less; pulse, 100; temperature, 98·4°.

16th.—Wound dressed; there is a slight trace of bile in the discharge, and on removing dressings some bubbles of gas escaped; no pain or tenderness. Pulse, 96; temperature, 98·6°.

From this date the patient made an uninterrupted recovery, the temperature never going above 98·6°, the pulse gradually diminishing in frequency, until on the 21st, when, the wound being quite healed, except at site of drain, he was allowed up. Liquid nourishment was first given

by the mouth on the 17th and on the 25th—that is, fifteen days after the operation—he was allowed bread with essence of meat. He rapidly increased in weight, and left the hospital at the end of May, weighing 8 st.—his weight before operation being, as above-mentioned, 6 st. 5 lbs. He now weighs 8 st. 7 lbs.

Before referring to the statistics of this operation, there are some points in reference to the above case which are deserving of notice. First, the course taken by the contents of the intestine was peculiar. Instead of passing downwards to Poupart's ligament, and presenting above that structure, as in most cases, they passed under the cæcum, and, turning over the iliac crest, pointed near the edge of the quadratus lumborum. Second, it is unusual to find so many openings exist in the bowel without exciting suppurative peritonitis; and third, the effort of nature to relieve the bowel, as shown at A, Fig 1, is remarkable. Here adhesive peritonitis allowed perforation to occur without extravasation, and with the effect of re-establishing the continuity of the intestinal canal, when the abscess obstructed the ileum at F, Fig. 1. It is also worthy of remark that the suturing caused a temporary narrowing of the intestines, as evidenced by the condition produced by flatus passing through the bowel, as noted on the 14th.

The cases of partial and complete resection of the bowel conducted up to the present, number, as far as I am aware, 212. A review of those cases, and of their results, affords us a fair opportunity of studying the value of a procedure which is now becoming one of general adoption. It should show us under what circumstances this proceeding is likely to be successful, the dangers to be provided against, and the most satisfactory way of carrying out each step of the operation.

Section A.—Taking first the instances of resection for gangrenous hernia, we find that of 76 cases, 41 died; 11 from yielding of the sutures; 8 from exhaustion; 2 from carbolic acid poisoning; 2 from asphyxia; 12 from septic peritonitis; 3 from simple peritonitis; in the others the cause of death is not noted. Now, a study of these cases will show on what this high death-rate depends. Of the 11 cases in which the sutures yielded, in 4 the fatal result was brought about by an overloaded condition of the bowel; in 3 it was due to imperfect suture; and in the remaining 4 to the low vitality of the bowel at the suture line, one of them having the mesentery detached for half an inch. In most of the cases death resulted from extravasation and septic peritonitis.

Of the 12 instances of septic peritonitis without perforation, 7 were examples of long strangulation, the bowel being inflamed and softened for a considerable distance beyond the seat of gangrene; in 3 fæces escaped into the abdomen during the operation; and 2 of the 3 died rapidly of septic intoxication. In the other 2 the fatal result was due in part to lengthened exposure of the peritoneum during the operations, which lasted nearly three hours. Of the 8 cases which died of exhaustion, 3 were in a state of great prostration before the operation; in 3 the operation was tedious owing to delay in breaking down of adhesions; while in the other two instances the patient lived only a few hours after operation. Two of the 3 cases of simple peritonitis resulted from the operation; 1 arose from indiscretion in feeding. The cases of asphyxia and of poisoning were accidents which may attend any prolonged operation, and so need not engage our attention here.

The question now arises—What percentage of these cases are due to causes over which we have control? More than one-fourth of all the cases died of troubles arising from yielding of the sutures. By eliminating the causes of this perforation we should be able to reduce the mortality considerably. The causes, as above shown, are—1st. Suturing through diseased tissue. 2nd. Faulty suture material, or its improper application. 3rd. The return of overloaded coils of intestine. 4th. A separation of the mesentery from the bowel. Each of the above causes we can largely control, as I shall mention hereafter. The deaths from septic peritonitis, numbering as they do more than 40 per cent. of all the deaths from this operation, will become fewer when we learn to operate before septic absorption has commenced, and when we avoid undue exposure of the peritoneum, while deaths from exhaustion will entirely disappear from the list if we hearken to the words of Chauvel, who, in speaking of enterectomy for injury, said—"Either operate early, or if you have allowed the propitious time to pass by, abstain from all surgical intervention."

Section B.—Resection for intussusception has been performed 13 times, and on only 3 occasions with success. In 4 cases which succumbed, death resulted from gangrene of the suture line, due to suturing inflamed tissue. In 3, septic peritonitis without perforation occurred. In 2, death arose from exhaustion in a few hours after the operation. One case was pulseless during the last minutes of the operation, and died while being carried to bed. It would be very unfair to ascribe this high mortality to the inherent

dangers and difficulties of the operation, since some of the cases recorded could not have withstood even a trivial operation.

The histories of these cases show that surgical intervention to be effective must be early.

Of the other cases of acute obstruction treated by resection, 6 in number, 4 died; 1 recovered completely; another with a fæcal fistula. This gives a total of 95 cases of resection, with 54 deaths; and I doubt if this represents the actual mortality after this serious operation. I fear that many of the failures met with in this branch of surgical practice are not recorded, and so I would be inclined to look upon the above as the bright side of the picture of surgical prowess in dealing with acute intestinal obstruction.

It will be seen from the above list of operations conducted for the relief of acute intestinal obstruction that a very high mortality attends all attempts at resecting and immediately suturing the bowel. That such should be the case is not to be wondered at when we consider the state of things existing at the seat of disease, and acting injuriously on the entire system.

Taking first the instances of resection for gangrenous hernia, we find that 41 of 76 died, most of them within a week of the operation, and either from opening of the sutures, septic absorption, or suppurative peritonitis.

M. Bouilly, in his able article on "Enterectomy," says that resection and suturing of bowel for gangrene is not only authorised but indicated. He takes care, however, to safeguard this opinion by enumerating the conditions under which it should be done, but such conditions are very rarely present when gangrene sets in. Dr. Carl Koch, in a very instructive article on this subject,[a] says:— "I must confess that neither heretofore nor in my present practice was I ever tempted to do primary resection in gangrenous hernia. I always construct an abnormal anus, with the intention of removing it by operation afterwards." And why avoid this immediate suturing of the bowel and closing of the abdominal wound? The answer is found in another part of the same article, and may be briefly stated as follows:—

1. The patient is already broken down, the severe pain and vomiting due to strangulation greatly weakening the heart, as shown by a miserable pulse.

2. The operation, necessarily tedious, requires a protracted chloro-

[a] Deutsche. Zeitschrift für Chirurgie. March, 1886

form narcosis, producing a collapse from which many patients never rally.

3. The very marked inflammatory changes about the gangrenous part render suture and return of the bowel a very dangerous proceeding, since, as shown by many of the cases noted, gangrene of the suture line and perforation occur.

4. Septic peritonitis may arise from introducing into the abdomen a piece of intestine in a state bordering on gangrene.

It may be argued that the intestine may recover when gangrene has almost set in if returned to the abdominal cavity. This fact is undoubted, but it is only in the absence of a cutting operation on the bowel. But when the intestine is so far impaired that its return into the abdomen is unsafe, and its removal becomes necessary, we usually find it thickened and inflamed for a considerable distance beyond the gangrenous part, as well as being surrounded and infiltrated with a sepsin-holding fluid, which is (especially in the presence of a cutting operation, and in a patient exhausted by a protracted chloroform narcosis) capable of producing septic intoxication and rapid death.

And this applies alike to all cases of acute intestinal obstruction in which gangrene is present. From the results above noted, and from my experience of cases of gangrenous hernia, I certainly concur with Koch in saying that in all cases of gangrenous hernia and in intussusception, when the bowel is greatly inflamed, a false anus should be formed, leaving the suturing of the bowel for a future operation, when its walls have become healthy. Even in a healthy bowel the suture line occasionally sloughs, leading to perforation and peritonitis; how much more readily and frequently will an inflamed and softened tissue yield and produce a fatal result. A point of very considerable importance in reference to this immediate resection and suturing is the danger of breaking down adhesions which may have formed at the abdominal ring, and would prevent, if left alone, all danger of extravasation. The result of rupturing these attachments is seen in an instance brought before the Surgical Society of Paris by M. Bouilly, and referred to elsewhere in this paper. In this case digital examination of a fæcal fistula broke down peritoneal adhesions, and the patient died of septic peritonitis in twenty-four hours after.

There are, then, at least three reasons for dividing the operations for gangrenous hernia into two stages (*a*, formation of an artificial anus; *b*, making gut continuous)—1st. The much better

chance of an immediate good result. Of 36 cases in which adhesions were left, and the gangrenous parts were allowed to slough after emptying the bowel, only 9 died. The enterotome of Dupuytren effected a cure in 13, and was followed by abscess, peritonitis, and death in 1; resection was carried out in 5, with 1 death; in 3 the fistula closed spontaneously; in 1 the patient died of rapid exhaustion, owing to the fistula being high up in the small intestine. 2nd. The prospect of spontaneous closure of the artificial anus. 3rd. The chance of being able to close the fistula by a skin-flap or by Dupuytren's enterotome.

Much that has been said in reference to hernia will hold good in speaking of intussusception, since the conditions resemble each other so much. Up to this the results of resection have been very unfavourable. This is, I think, owing to the delay in operating arising from fruitless efforts at reduction of the invagination, and to the time allowed to elapse before operation is attempted. In irreducible invagination immediate resection must, as a rule, be done, since the ensheathed piece of intestine will slough off and give rise to septic peritonitis if left in the abdominal cavity. Whether complete suture should follow the resection of the bowel or an artificial anus be formed is still doubtful; I would be in favour of leaving free exit for the intestinal contents.

Section C.—We next come to study the value of enterectomy and enterorrhaphy in cases of chronic intestinal obstruction arising from cancer or other causes. The following are the results in 26 cases which I have collected, with the object of estimating the real worth of these operative procedures:—7 were for simple stricture, with 3 deaths; 19 for malignant disease, with 11 deaths. Most of the cases died with pyæmic symptoms. Five of those operated on for malignant disease had secondary deposits in the deeper organs, while 3 of them were already greatly broken down by hæmorrhages and inanition. Many of the resections here were only of small portions and not engaging the mesentery, and until a list of many complete resections is made accurate conclusions cannot be arrived at.

I have purposely omitted from the above number all mention of pyloric and rectal stricture, as I have already called attention to the results of pylorectomy and excision of the rectum.[a]

The above records are somewhat disappointing, but when we consider the circumstances under which many of the operations

[a] Dublin Journal of Medical Science. Vol. LXXXIII. No. 186. P. 511. June, 1887.

were performed we are obliged to admit that the results are good. For instance, in some of them no preparation was made for resection, and, as we shall see hereafter, much depends on carrying out well the details of the operation. In others the position of disease protracted the operation, while in not a few the patients were already in a pyæmic condition before the operation.

As far as I can see, from the histories of cases before me, there is no need for making a false anus unless the patient is much broken down, ulceration exists above the seat of stricture, or there is acute obstruction. In the first instance a protracted operation would lead to a fatal result, and in the second and third the bowel wall would yield and death occur from peritonitis. In most chronic obstructions resection and immediate suturing is advisable, but enterectomy or colotomy is preferable to resection in acute cases; because, first, the patient is prostrate and unable to bear a lengthened operation; second, the intestine is unfit for a plastic operation, owing to the infiltration of its walls with lymph and fœtid pus. While no case of recovery is recorded after resection in acute obstruction due to stricture or cancer, Van Erckelens has shown that of 262 colotomies 151 recovered. I believe that in operations on the large bowel, more especially when performed while severe inflammation exists at the seat of stricture, complete section of the gut should not be made at first, because thereby the peritoneum is necessarily much implicated at a time when the bowel is not only inflamed but often ulcerated, and frequently the receptacle of accumulated filth. Under such circumstances septic peritonitis is not to be wondered at, and accounts for the much higher mortality attending resection than colotomy.

Section D.—Of 49 resections for artificial anus 19 died, 2 failed. Death resulted from septic peritonitis in 6; simple peritonitis in 4; collapse, 4; obstruction, 3; pulmonary embolism, 2. Of the deaths from septic peritonitis 4 resulted from yielding of the sutures at the mesenteric border; 1 from yielding of sutures due to gangrene at wound-border; 1 from an injudicious separation of mesentery beyond the line of section of the bowel. One of the cases of peritonitis had symptoms of that trouble before operation; in 2 the operations were protracted, and much handling of the intestines occurred; in the fourth case no cause could be assigned for the fatal attack. Two of the cases of collapse were quite unfit for the operation, while of those which succumbed to intestinal obstruction the result was uninfluenced by the operation in 2 instances. The

mortality following the operation for anus preternaturalis will diminish greatly when cases are selected, the patients properly prepared for the operation, and the minute details of that procedure accurately carried out.

The above list is very encouraging, especially as it includes a number of cases quite beyond the reach of treatment by Dupuytren's or other methods. At least two-thirds of the cases recorded have recovered. Now this state of affairs, when compared with that shown in Section A., is a startling proof of the folly of subjecting patients suffering from gangrenous strangulated hernia to a lengthened operation.

[*To be continued.*]

ART. II.—*The Treatment of Mammary Tumours.*[a] By JOHN FAGAN, F.R.C.S.I., Surgeon to the Royal Hospital and Belfast Children's Hospital.

THE study of the nature and treatment of mammary tumours is of the deepest interest to the scientific and practical surgeon. Their ætiology is still obscure and unsatisfactory, their pathology ever shifting, their diagnosis in many cases most difficult, and their treatment unsatisfactory in the highest degree. Eminent workers in this field of science are ever advancing new theories, only to be upset in a very brief period by newer still.

Professor Billroth, in his "Essay on Tumours," quotes the following definition of a malignant mammary growth from the classical work of Lorenz Heister, in the year 1731:—"The name scirrhus is given to a painless tumour that occurs in all parts of the body, but especially in the glands, and is due to stagnation and drying of the blood in the hardened part." And he adds—"In a hundred years will they laugh at our present anatomical and clinical definition as we do now at good old Heister?"

Interesting as the consideration of the ætiology and pathology of this subject would be, I mean to confine my remarks at present to that part of it which possesses the greatest practical interest for us, busy workers, who are daily brought in contact with the cases that come to us seeking relief.

I do not know any more trying position than that of the medical adviser who is consulted by a woman concerning a tumour in the breast of a doubtful nature, and is asked by her if it is dangerous,

[a] Read before the Ulster Medical Society.

and if it can be cured? So much hangs on the opinion formed, and the advice tendered, that it should stimulate us to perfect ourselves on this subject by close observation of our own cases and a careful study of the experiences of other observers in the same field. I mean to treat this subject not in accordance with the methodical classification of the text-books, but from my standpoint as a clinical observer; and if I omit or pass over lightly many of its important features, it is because it would be impossible to deal with the whole within the narrow limits of a paper read under the conditions now imposed on me. I propose to consider it under the three following heads—viz., the treatment of—

1. Tumours potentially malignant, but usually classed as non-malignant.

2. Well-defined malignant tumours, that are usually subjected to operation.

3. Tumours in a very advanced stage, ulcerating or accompanied by great cachexia, that are usually considered unfit for operation.

I propose to deal with each heading separately, and in the inverse order I have here given them.

Commencing with the third, or those very advanced forms of malignant disease, I think it hardly necessary for me to describe for you what I mean to be placed under this category—unfortunately most of us are but too familiar with such. I do not know of any condition that is more capable of exciting our tender sympathy, and stimulating us to adopt means for its alleviation, than that of a poor patient suffering in the final stages of an ulcering, painful, malignant mammary tumour. The commencement of this stage is usually attained about the second year after the manifestation of the growth, when the neighbouring axillary glands are matted into a hardened mass, the skin around infiltrated, and that over the breast fissured or ulcerated. A little later the ulcer becomes wide-spread and deeply excavated; a fungus-like protrusion of the cancerous mass takes place, gangrenous shreds of which, bathed in a most offensive secretion, are being constantly cast off; repeated and sometimes alarming hæmorrhages occur; and the pain, never ceasing, producing restless days and sleepless nights, becomes intense. In this last stage the appearance of the patient undergoes a marked change; she becomes rapidly emaciated; the skin grows sallow and clayey; each day finds her weaker; and soon the scene closes in a painful death.

Such is an imperfect picture of a typical case of scirrhus of the

breast, in its final stage, that has been allowed to run its natural course.

In such cases the indications for treatment are—to relieve pain, to neutralise the offensive odour, and to prevent and restrain hæmorrhages.

To relieve pain we must have recourse to opium and its preparations, administered by the mouth or hypodermically. Locally I found a most effectual and soothing application in a lotion of dilute solution of subacetate of lead with laudanum. Another useful application is one part each of extracts of belladonna and stramonium to eight parts of vaseline. If the breast is not tender, ice-bags give great relief.

To correct the fœtor, Esmarch uses a powder composed of one part each of arsenic powder and muriate of morphin, eight parts of calomel, and forty-eight parts of powdered gum-arabic, of which he sprinkles daily half a teaspoonful on the surface, until a yellowish, leathery crust forms, which, on dropping off, leaves a clean granulating surface. This, he says, is safe, painless, and disinfecting. Five grs. of chloral hydrate to an ounce of vaseline is an effectual deodoriser, and allays pain as well. It is unnecessary for me to mention various other applications that may be used to meet the requirements of individual cases.

There are various hæmostatics used when hæmorrhage complicates the case, such as ice, Ruspini's, Richardson's, and various other styptics; but the most effectual for restraining hæmorrhage, and serving at the same time as a grateful soothing application, is the puff-ball, some time ago introduced into practice by Dr. Thompson, the distinguished surgeon of the Tyrone Infirmary.

There is yet another mode of treatment for these hopeless cases that perhaps you will be surprised to hear advocated. I mean their removal by the knife. It is unnecessary for me to say that this is only palliative, and can be had recourse to only in certain conditions of this advanced stage. In acute cases of rapidly growing sarcomata, and in all cases where the viscera are seriously involved, and where the dyscrasia and marasmus are extreme, no such line of treatment should be for a moment entertained; but there are cases, of not infrequent occurrence, where the patient, worried and tortured by the continuous pain and loathsome fœtor of an ulcerating, bleeding, cancerous mass, anxiously appeals to have something done for her, not so much with a view of prolonging her life as to render what little span of it still remains more tolerable.

I believe a great deal of good can be done by removing the cancerous breast in such cases. The following that occurred in my practice in hospital some years ago, will serve as a type of a class that may with advantage be subjected to operation in advanced stages of cancer of the breast :—A woman from Ligoniel, about fifty years of age, came under my care. She had a worn, sallow, anxious look. She got no rest, and suffered intense pain. Her axilla was bound up by the matted hardened glands. Her breast was converted into a hard scirrhous mass, ulcerating and fungating, bleeding, and emitting a most fœtid odour. The skin around was infiltrated, and the arm was swollen. Her appetite was good, and there was no evidence of any of the viscera being involved. She was quite prepared for the gloomy prognosis I gave her, but begged to have the breast removed, in the hope of thereby getting some respite from her agonising pains. After explaining to her the great and immediate risks incurred by, and the barren results that might follow from, the operation, she still persisting, I removed the mass. The exposed raw surface resulting was the size of a dessert plate. In tearing the indurated mass from the chest wall portions of three ribs were laid bare, and the intercostal muscles were infiltrated at several points. Some two or three intercostal arteries, that broke off flush with the ribs, gave some trouble before they were secured.

She was exceedingly low after the operation, but in a few hours rallied, and daily gained in strength, and expressed herself as not only free from pain, but feeling comfortable and happy. In the course of a fortnight she went home, improved in every way, thankful for the relief afforded her, which was so striking that it engendered in her a hope of possible recovery from her malady. Two months afterwards the district nurse reported to me that she was still living, and free from pain. I did not again hear of her, but I presume she soon died. The operation, I believe, prolonged her life, and not alone saved her from a protracted period of intense suffering, and a painful death, but enabled her to pass what remained of it in comparative ease and comfort.

I have since that time operated on two somewhat similar cases with very gratifying results.

There is a condition known as atrophying scirrhus, which is a very rare occurrence, and one that it is better not to interfere with by operation. I have met with one well-marked case of the kind. An old lady, seventy-five years of age, was under my care for a

fractured clavicle. While examining her I noticed a puckered nodule on the site of the breast. It felt quite hard and shrivelled. Before I asked any questions, she said, "Dr. —— wanted to take that away twenty years ago, but I would not let him, and I think I was right." Judging by the result, I thought so too.

The later the manifestation of the disease, the slower, it is supposed, is its progress; and when we meet with a small knotty solitary tumour in a woman of fifty or fifty-five years of age, we should hesitate before recommending its removal, for many of them, like the case of the old lady I have mentioned, exist for ten, fifteen, or twenty years without giving any trouble—the only treatment necessary, as in her case, being a little flannel round this part to protect it from injury, and keep it warm.

Acute forms of mammary scirrhus or sarcoma, and especially if they occur in pregnant or nursing women, should not be subjected to operation. It gives no relief to the symptoms, and almost invariably leads to a fatal issue in a very short time. Several such cases are mentioned in the works of Billroth and other eminent authorities.

I will now take up for consideration the treatment of well-defined malignant tumours that are usually subjected to operation; this class I have placed under my second heading.

As in all forms of disease or injury, so it is in the case of malignant mammary growths, the sooner they are detected, and their true nature recognised, the more effectually can they be treated, and the quicker and more decided the treatment the more successful will be the result.

It is unnecessary for me to describe the appearance of an ordinary scirrhus of the breast, that usually presents itself to us when it is sufficiently advanced to make the patient feel there is something seriously the matter with her. The nipple is, probably, retracted; the skin adherent to the hard, irregular glandular mass; and, perhaps, a few glands in the axilla are enlarged and indurated. It is a pity that women, through false delicacy or carelessness, do not attend to these growths on their first manifestation; if they did so, and if their medical attendants were more decided in dealing with them, a great amount of mental and physical suffering would be spared them. I will suppose that a woman about forty-seven years of age, the mother of a large family, who suffers from a small, hard, nodular solitary tumour, inseparably connected with the mamma, with slight retraction of the nipple, and occasional

shooting pain, presents herself for an opinion. The diagnosis is carcinoma. What shall the treatment be? This is simple. It resolves itself into either of two methods—the palliative or the radical. The physician or surgeon who adopts the first of these methods must either have unbounded faith in the potency of his drugs, a diffidence in his diagnostic powers, or a very indifferent knowledge of the pathology and clinical history of cases of the kind; or else he may say—I am fully alive to the gravity of the case, but I decline to admit that your so-called radical method is by any means radical, and I believe that by judicious general treatment my patient will live as long and suffer less than if she is subjected to your painful and dangerous mode of treatment.

I am fully aware there are many medical men who view the treatment of cancer cases in this light, and act in accordance with it. While respecting their honest convictions, I pity them for entertaining such; but I pity still more their confiding patients who have the misfortune to be under their guidance for this particular affection. It is not my intention to notice the various nostrums that are lauded as cancer cures, or the local applications, mechanical or otherwise, that have been used. I am ready to admit that judicious medication and local applications are capable of dispersing some tumours that are not malignant, and may even temporarily stay the progress of malignant ones, and in the rare instances of atrophying scirrhus may have the credit attributed to them of modifying the action of the growth. That the radical method—that is, the free removal of the cancerous breast and all the affected parts that are accessible—is the best form of treatment, I have not the slightest doubt. It is the opinion of many surgeons of eminence, with whose writings I am acquainted, and it astonishes me that notwithstanding this very decided approval of the propriety of operating in such cases, medical men are found who temporise with those cases in their early, and disapprove of operative interference in their more advanced, stages. For this reason it is no wonder Billroth expressed himself in the following way :—"Few as are the complete recoveries from cancer of breast after operation, I believe they will grow more frequent when the family doctor, to whom they are generally first shown, urges operation earlier, for at present they usually let the best time for operation slip by, till the local disease and the affection of the axillary glands are so far advanced that a complete operation is no longer practicable."

The main objects aimed at by all forms of treatment are—

1. To eradicate the disease with the prospect of its non-recurrence.

2. To prolong life, and render it useful and enjoyable.

Is the disease ever thoroughly eradicated? Surgeons differ on this point.

Sir J. Paget says:—"I am not aware of a single clear instance of recovery—of such recovery, that is, as that the patient should live for more than ten years free from the disease." Yet he mentions a case where he removed a scirrhus breast, and the woman lived eleven and a half years afterwards; and after death, from other causes, no trace of cancer was found except a few hard white masses in the liver and omentum.

It must, however, be remembered that when Sir J. Paget wrote this the mode of operating was not so thorough as has been practised lately, nor were tumours usually subjected to operation at the very early stages of their manifestation.

The experience of the most prominent British, American, and European surgeons is, that in many cases a timely and thorough operation begets immunity from the disease in a considerable number of cases. What I mean by thorough operation I will explain further on.

Dr. Gross, in his admirable work on "Mammary Tumours," after giving statistics bearing on this point, says:—"A radical cure may be assumed if the patient has survived the disease over three years without local or general recurrence after the last operation." And comparing 47 patients who were free from the disease three years after the last operation with 67 whose cases were allowed to run their natural course, he says:—"As a further proof of the influence exerted upon the duration of life by radical operation, attention may be called to the fact that nearly one-third were free from the disease after the lapse of six years, while of the 67 patients in whom no operation was practised, only one survived after that period."

Surgeons, when operating in cases of cancer, except very advanced ones, should always aim at effecting a radical cure, and not be influenced by the statistics and views of Paget and some other eminent authorities who advise interference more with the view to avert mental anxiety and physical suffering, and to prolong life.

Eighteen years ago a paper appeared in the "Medico-Chirurgical Transactions," by Mr. Moore, on "The Influence of Inadequate

Operations upon the Theory of Cancer." In his paper he insists that not only the whole mamma, but that all involved adjoining textures—as skin, fat, pectoral muscle, and lymphatic glands—must be extirpated, and that the tumour should not be cut into nor be seen.

This thorough and sweeping method is of late years growing into greater favour, and is widely practised by the foremost surgeons of this Continent and America.

One recent authority says—"This view (the curability of cancer) is now rapidly gaining adherents among the best minds in all parts of the world, and surgeons are beginning to know that cancer can be cured by thorough operations, if it be attacked before it has disseminated itself extensively locally, or has tainted the general system." And, again—"This decision is not only based upon the study of its general pathology, but is confirmed by the practical tests of the results of operations."

The second object aimed at by operation is to prolong life and render it useful and enjoyable. That it fulfils these requirements anyone who consults statistics on the subject, or has watched cases that have, and those that have not, been operated on, will find no difficulty in convincing himself of such.

Most surgeons agree that a comparison of the two averages of cases operated on and those not operated on indicates that operation adds twelve months to the life of the patient.

As regards the comfort and convenience of the patient, I think there can be no doubt that by operation such conditions are more effectually secured than if the cases are allowed to take their natural course.

In two cases that lately came under my observation, where patients were the subjects of advanced mammary scirrhus, and where operation would not be submitted to, the pain they endured, notwithstanding careful medication, was intense, and their sufferings increased till death put an end to them. I need not draw a picture of such cases, for most of you are but too familiar with them.

In contrast with such, let me state the result in five private cases on which I operated during the first six months of 1882. One case died two years after the operation, and up to a very short time before her death was absolutely free from pain and discomfort, and was able to enjoy life and go through her ordinary duties in an efficient manner.

The second case progressed equally favourably till about a year and a half ago, when a nodule the size of a walnut showed itself at the lower border of the pectoral muscle on the opposite chest wall. This I removed, together with the axillary glands, some of which were indurated. The breast was free. She made a good recovery, and is still in a fairly good state of health.

The third case I heard of about a year ago as doing well in every way.

The fourth and fifth cases were progressing favourably some months ago, with no apparent return of the disease.

All my cases (and I have up to this operated on about 50) have not progressed as favourably as those mentioned, but I might say I have never had reason to regret operating, inasmuch as I felt that by doing so my patient was placed in every way in a better condition than if her disease was allowed to follow unchecked its natural course. If further proof were wanting of the benefit of operating in this disease it is only necessary to turn to the writings of Billroth, Paget, and most eminent authorities, to be convinced of such.

Billroth, in the course of his remarks on the subject, says:—"It would be very unjust to consider such operations useless because they cannot cure the disease, for they render the patient's life easier and more agreeable—if only for a time, still, possibly, for the greater part of the time that he has to live. We might be very glad if, by an operation or other treatment, we could temporarily restore to the pleasures of life a patient with advanced tuberculosis of the lungs, as is the case in operating for some cancerous tumours."

And Paget says:—"In cases of acute hard cancer the operation may be rightly performed, though speedy recurrence and death may be expected. Its performance is justified by the probability that it will in some measure prolong life, and will save the patient from dreadful suffering. On similar grounds the operation seems proper in all cases in which it is clear that the local disease is destroying life by pain, profuse discharge, or mental anguish, and is not accompanied by evidences of such cachexia as would make the operation extremely hazardous."

Time will not allow me to dwell on other forms of malignant growths that attack the female breast. Suffice it to say that it is well to remove all such as soon as there is the slightest suspicion of their malignant nature. Regarding the local recurrence of the

disease, I think it good practice to remove every manifestation of it as soon as possible, if it is in a position that it can be removed with safety.

In July, 1883, I was consulted by a lady for a hardened gland mass in her axilla. She had her breast excised a year previously, and had some glands removed from her axilla three months later. I recommended the removal of the new growth as well as the old cicatrix that was beginning to ulcerate at a few points. I was assisted by her medical advisers who performed the two previous operations, and after a tedious process of dissection, during which the axillary vein was exposed for more than an inch, I succeeded in clearing out the axilla, and removed the old breast cicatrix. She made a good recovery. Three years after I operated on her, and four after the first operation, in reply to a letter which I sent her medical attendant, asking about her condition, he says :— "The disease has returned about the cicatrix. I am glad to say, however, that her general health keeps good."

In the case of recurrent sarcomatous tumours, they should be removed as fast as they appear. Gross succeeded, after removing 52 of these, by 23 distinct operations, in a period of four years and a half, in checking their reproduction, and the patient was perfectly well nearly eleven years subsequently.

Removal of breast tumours by caustics and cautery find still some advocates, and in certain cases not suited for the knife may be found of advantage.

The next class I have to consider embraces the most usual forms of non-malignant neoplasms, as the fibromata and adenomata. These I called tumours potentially malignant, but usually classed as non-malignant. It is an interesting practical point to determine whether mammary neoplasms, simple in their first stage of existence, finally degenerate into those of a malignant nature. Almost all recent authorities agree that they do so. The tendency of true adenoma to pass into carcinoma is a well-established fact. Billroth, Labbè, Coyne, and Duplay are of opinion that the metamorphosis of fibroma into sarcoma is so frequent that primary sarcoma of the mamma is very rare; and Paget, in the "Bartholomew Hospital Reports," has lately pointed out that not only hard, mammary glandular tumours, but certain ill-defined and tough, rather than hard indurations, may become carcinomatous.

We know that youth is the period for the appearance of these non-malignant neoplasms, and that with increase of years do they

become more doubtful in character, and more apt to assume the malignant form.

The two great features that should influence the treatment in this class of cases are—the age of the patient and the progress of the growth. In very young girls invariably, I may say, the growth is a fibroma, and may disappear under suitable treatment, general and local. Among the local measures compression is most efficacious, and may be carried out by means of spring pads, air cushions, or strapping. I was consulted about ten years ago concerning a young girl, sixteen years of age, who had a hard lump in one of her breasts. I diagnosticated a fibroma, and ordered suitable treatment. She married at nineteen, and died at twenty-five. She had two children. I saw her before and after her marriage till a short time before her death, and there was no perceptible change in the lump. Pregnancy and lactation seemed to have had no effect on it. It was a potentially malignant tumour, and in all probability, had the woman lived, would have developed into a carcinoma. From twenty-five to forty is the age for the doubtful growths, or those that pass quickly into the malignant forms. These are the adenomata and fibro-sarcomata. This is the class that puzzles the medical man what to recommend for them. If they remain stationary, they may improve under medication; but if they show a tendency to increase in size and hardness, no time should be lost in extirpating them.

For such growths Sir James Paget recommends with great confidence the strapping of the breast with belladonna plaster, and the administration of a drachm of liq. potassæ and two grains of iodide of potassium three times a day after meals. If this fails, he advises excision. He says:—"It may seem an unreasonable thing to perform a serious operation for a disease which may never, or only at some uncertain time, become cancerous. Yet, I cannot doubt that the operation should be advised for such an induration of the breast as I have described, if there be great difficulty of diagnosis between it and scirrhus cancer."

I must apologise for the hasty and ill-digested way in which I have brought this subject under the notice of the profession, and I will now conclude by summarising the views I have formed, based on my own limited experience, as well as on the study of the teachings of others, on the subject of the treatment of malignant mammary tumours.

1. That in many of the very worst forms of advanced painful,

ulcerating scirrhus, where there is no immediate danger of death from marasmus or visceral complications, the breast may be removed with great benefit and relief to the patient.

2. That all cases of malignant growths of the breast, as soon as they are diagnosticated, should be removed at once by operation and in the thorough manner I have described.

3. That all doubtful cases should be dealt with in the same way.

4. That all recurrent growths should be removed at their earliest manifestation.

5. That all non-malignant neoplasms, as soon as they show a tendency to enlarge, and especially between the ages of twenty-five and forty years, should be removed without delay.

The following quotation from the writings of Mr. Jonathan Hutchinson bears forcibly on this point:—"Too late! too late! is the sentence written but too legibly on three-fourths of the cases of external cancer concerning which the operating surgeon is consulted. It is a most lamentable pity that it should be so; and the bitterest reflection of all is, that usually a considerable part of the precious time which has been wasted has been passed under professional observation and illusory treatment."

When the doctrine of the precancerous stage shall be widely adopted, and when surgeons generally shall recognise the propriety—let me say the duty—of operation for purposes of prevention, then, and I believe not till then, shall we witness a considerable reduction in the mortality of cancer.

ART. III.—*Strangulated Hernia, with some Statistics and Remarks based upon the result of Sixty Operations; also General Remarks relative to the subject of Strangulated Hernia.*[a] By J. WALTON BROWNE, B.A., M.D., Surgeon, Belfast Royal Hospital; Surgeon, Belfast Ophthalmic Hospital.

THE common occurrence of hernia, and the frequency with which various states of it demand treatment for the relief of conditions which, if unrelieved, shortly endanger the life of the patient, render it necessary for the surgeon to acquaint himself with all that can be known of the morbid processes, and the best remedial management of such processes.

In November, 1879, I read a short paper before the Ulster Medical Society upon the results of 20 herniotomies performed in hospital and

[a] Read before the Ulster Medical Society.

private practice. These included 12 inguinal, 7 femoral, and 1 umbilical. Of these 20 cases, 11 died; but 6 of the cases were almost moribund before being brought under notice. During the past eight years I have operated upon 19 inguinal, 16 femoral, and 3 umbilical cases of strangulated hernia. I have also performed 2 operations for the radical cure of hernia, and 2 abdominal sections for the relief of symptoms of strangulation occurring in patients who had previously been the subjects of reducible hernia. This makes a total of 42 cases operated upon, if I may be allowed to add the 2 cases of radical cure and the 2 of abdominal sections. Of these 42 cases, 11 died; the 11 deaths can be credited with only 5 unsuccessful cases, the other 6 being perfectly hopeless at the time of operation. Excluding these hopeless cases, the mortality in the 42 operations has been a little over 14 per cent., and when I add my previously recorded 20 cases—raising the total number of operations to 62, also deducting the almost moribund cases—the death-rate is 17·7 per cent.; or, if you think I should include all the cases, then the death-rate rises to 36 per cent.

The death-rate in hospital practice has been 25 per cent., in private practice, 11 per cent.; that is, taking into account good and bad cases. That the mortality is higher in hospital than private practice is the experience of all surgeons, and is due to the fact that much valuable time is lost before procuring advice, or in fruitless efforts to reduce the swelling before the patient's admission. My average mortality of 36 per cent. I consider fairly satisfactory when compared with statistics to which I shall now refer:—At the Belfast Royal Hospital, from the 1st of January, 1850, until the 31st of August, 1886, 218 cases of strangulated hernia were operated upon, 76 died, giving a mortality of 34·86, which is an extremely satisfactory death-rate for hospital practice.

Mr. Spanton, in the "Transactions of the International Congress for 1881," gives a summary of returns from six metropolitan hospitals and five provincial hospitals, showing that 1,870 cases of hernia had been operated upon, with 782 deaths, giving a mortality of 41·80 per cent., which is about the average at the large London hospitals. Billroth, in his "Clinical Surgery," mentions 73 herniotomies with 38 deaths, a little over 52 per cent. No doubt the death-rate in these references is very high when compared with other major operations.

The duration of the strangulation must necessarily greatly influence the issue.

The late Mr. Gay has given a table in which he shows that of 49 operations performed upon the first day of strangulation, or within forty-eight hours, only 6 deaths occurred, whilst of the 19 cases of operation between the fourth and tenth days 14 deaths occurred. Amongst my unsuccessful cases I had one case where the gut had been strangulated for ten days; in one the gut was down seven days; in four the strangulation had existed for five days; and one case had been diagnosticated as a case of orchitis, and treated as such for seventeen days previous to coming under notice.

In many cases deemed hopeless are we justified in operating? I think so, when we remember the teaching of Sir A. Cooper and Sir James Paget.

Sir A. Cooper, in his "Surgical Lectures," states "that if the pulse be so small as to be scarcely perceptible, and the countenance anxious and sunken, no time is to be lost; but even under these circumstances, and with hiccough superadded, I have known the operation succeed."

Sir James Paget, in his "Clinical Lectures," says:—"A patient must not be allowed to die with a strangulated hernia if by any means whatever the strangulation can be relieved; and you must not be averted from the operation by any consideration of the number of deaths that follow it." So that, having the opinions of two such distinguished authorities to guide us, I think we are justified in operating in all cases of strangulated hernia, no matter how hopeless the case may appear.

In connection with this point I had a patient brought under my care suffering from a strangulated inguinal hernia of four days' duration. She was very weak, and seemed alarmingly ill; had a sunken appearance, with cold extremities. I operated—opened the sac, and found the intestine universally adherent to the sac. I was occupied some time in breaking down the adhesions, and in doing so a large portion of the peritoneal coat of the constricted gut was detached, and I believe at several points even the muscular coat of the bowel was torn off. I went on with the operation contrary to the wishes of my colleague, but the patient made a good recovery.

In all the cases, with the exception of one, the sac has been opened.

I always like to see the contents of the sac. Although the stricture is frequently external to the sac, yet the neck of the sac may form the stricture.

Adventitious bands may remain inside, and as length of time is not an absolute criterion as to the state of the contents of the sac, but rather the tightness with which the bowel has been caught, you cannot tell with certainty when to open the sac and when to leave it unopened.

In all cases of femoral hernia we should certainly open the sac, because it is in this form of hernia you so frequently meet with omental sacs, strangulating the bowel.

The only case in which I did not open the sac was a case of strangulated femoral hernia. The usual incisions were made; the fascia propria exposed, then the sac. The stricture was divided external to the sac; by gentle taxis the sac was emptied of its contents. After the operation the symptoms of strangulation continued, and in three days the patient died. On *post-mortem* examination I found a small omental sac, in the centre of which was concealed a piece of intestine about the size of the top of the forefinger.

These omental sacs are frequently made up of many convolutions or foldings of the omentum, and I have ventured to designate them "compound omental sacs." When operating you open what you may consider the sac, omentum bulges out, then another supposed sac and more omentum, so going on, exposing layer after layer, as I did in one case, until I had exposed ten different layers before the intestine, which lay within the omentum, was reached.

All the authorities in England are fairly well divided about the propriety of not opening the sac.

Mr. Bryant states "that at Guy's Hospital, out of 59 cases of strangulated femoral hernia in which the sac was opened, the mortality was 50 per cent., and in those cases in which it was not opened the mortality was 30 per cent., being a difference of 20 per cent. in favour of the minor operation." He also states that the difference between the opening and non-opening of the sac in inguinal hernia was 40 per cent. in favour of not opening the sac.

On the other hand, we have Billroth, in his "Surgical Lectures," declaring it does not affect the subsequent results whether you perform the major or minor operation.

At St. George's Hospital, London, the sac is opened in all cases of hernia operations, and it is stated in "St. George's Hospital Reports," Vol. I., 1886, that 181 operations were performed and the sac opened in all but six cases. In this series of cases the mortality was 30·56 per cent.; and Mr. Holmes believes that opening of the

sac has no effect either on the death-rate or time required for the healing of the wounds. Mr. Haward, of St. George's, expresses his belief that the balance of advantage lies with the operation in which the sac is laid open. So that, taking into consideration the expression of Messrs. Holmes and Haward and Professor Billroth, I think we may open the sac with impunity, especially if we take great care to render the wound aseptic.

As regards the urgent symptoms of strangulated hernia, no doubt the most urgent is vomiting, and it is remarkable that the vomiting may be modified very much, provided the patient keeps quiet in bed; but when he makes any movement, or attempts to get up, then nausea and vomiting come on.

I have had many cases in which the pulse and temperature were normal, and in which, by the presence of this one symptom of vomiting, I felt justified in recommending an operation. In one case, where nausea was the only urgent symptom, I found the gut almost gangrenous; and in another, where the patient merely complained of "sour water" coming up her throat, I found a tightly constricted femoral hernia.

Paget has told us how we must not be deceived by the patient's expression. The patient may look well and tranquil and still have a tightly constricted femoral hernia. I have had four or five such cases.

Sir William Stokes, in the *British Medical Journal*, 1880, says:— "The reason why surgeons often delayed operations was the absence of those symptoms set down in books and lectures as diagnostic of strangulation." He also looks upon vomiting as the important symptom. I had one case where vomiting was absent, the patient complaining only of slight nausea. Immediately the administration of chloroform was commenced, vomiting started, and five pints of very fœtid fluid were discharged before the operation could be proceeded with.

I have been occasionally called to see cases where, in addition to the patient having an irreducible hernia, he had also some other affection which simulated the symptoms of strangulation, and it was a nice point to decide whether or not to interfere with the hernia.

Paget speaks of a case of umbilical hernia, where all the symptoms of strangulation were due to the passage of biliary calculi. He also mentions a case of simple femoral hernia where all the symptoms were due to an internal strangulation. Or your patient

may have two herniæ, and it is difficult to decide upon which you should operate. My colleague, Dr. O'Neill, not long since had such a case.

In consultation with my friend, Dr. Whitla, I saw a case of femoral hernia in an old gentleman. I operated. All went well until the third day, when we proposed to administer an enema. We found he had a malignant stricture of the rectum. Then the question arose—Were the symptoms of strangulation due to the femoral hernia or the stricture of the rectum?

I had another very interesting case, also with Dr. Whitla, where a boy had severe abdominal symptoms, and a swelling along the inguinal canal, which we considered might be a strangulated inguinal hernia, and the cause of all the trouble. I operated, found a patent tunica vaginalis, filled with some lymph and pus, but no intestine. The boy ultimately died, and upon *post-mortem* examination we found a perforation of the cæcum.

Respecting the diagnosis of the contents of the sac, I consider it quite impossible to accurately ascertain the contents of the sac before operating. Over and over again have I made and seen mistakes, and I always follow the dictum of Sir A. Cooper—"In operating for hernia, always do it under the impression that intestine is contained in the sac, and not omentum, because you will be more upon your guard."

When called to a case of strangulated hernia of recent occurrence, and when the symptoms are not very acute, and when taxis fails, I recommend the administration of an opiate, and if the hernia be large, the application of an ice-bag to the tumour, with elevation of the pelvis. It is in a large hernia the ice-bag is so useful. If the symptoms be very urgent, especially in cases of congenital hernia coming on in young adults, I do not delay, but proceed at once to administer an anæsthetic, and try the taxis, and this failing, I operate. I do not believe much in the use of the warm bath, considering it to be of no service in femoral hernia, and of very doubtful use in inguinal hernia. Its use in relaxing the parts is entirely replaced by an anæsthetic. More than once have I seen an aged patient receive a severe chill upon a slight exposure after a warm bath.

At the expiration of an hour I try very gentle taxis for four or five minutes. If the hernia does not yield, then produce anæsthesia, and try the taxis again; failing in reduction, I proceed at once to the operation. I need not tell you how gently the taxis should

be applied. A few weeks since I was called to operate upon a case of femoral hernia of forty-eight hours' duration. Upon opening the sac the gut, at seat of stricture, was not very tightly compressed, but the central portion of the protruded bowel was quite gangrenous, showing the amount of force which had been used.

In making the incision in the skin I have upon four or five occasions tried the incision recommended by Mr. Keetley, of London—an oblique incision almost parallel with the fold of the groin. This method of skin incision is specially useful in fat people, in whom the usual perpendicular incision is liable to gape; one disadvantage I found was the difficulty experienced in thoroughly exposing the contents of the sac.

In ten or twelve cases I administered no anæsthetic, but used anhydrous methylated ether locally in the form of a spray; the patients did not complain of much pain. I have also tried the local application of liquefied carbolic acid; it entirely diminished pain, but caused too much destruction of the soft parts. In six large scrotal herniæ I made a short incision down to the sac, and after dividing the stricture and returning the gut, passed a drainage-tube through the lower part of the scrotum. In similar cases which I have seen, and where this precaution was not observed, especially in elderly patients, troublesome inflammatory action of the scrotum supervened. In smaller herniæ make incisions full length of the tumour, and I need not tell you to make all your deep incisions of the same length as your skin incisions.

In a conversation which I had not long since with Mr. Lawson Tait he said very soon we would not be cutting down upon hernial sacs, but that the operation of the future for strangulated hernia would be abdominal section, and the drawing of the hernia from its sac by traction from within. Mr. Annandale, of Edinburgh, in the "Annals of Surgery" for 1886, says—"It is remarkable how easily the hernia can be drawn from its sac by traction from within." After the sac has been opened I find it is of great assistance in the division of the stricture to catch either side of the sac in a pair of Péau's forceps, and get an assistant to make traction, thus exposing well the contents of the sac. In the division of the seat of stricture, with the exception of two cases, where I accidentally wounded the gut, I have always used the hernia knife, introduced to the profession by my friend, Dr. Patterson, of the Western Infirmary, Glasgow. In my paper on Hernia, published in 1879,

I have already alluded to this knife, and will now just say that you will find it especially serviceable in operating upon femoral hernia when the stricture is very tight, also in cases of inguinal hernia, when large coils of intestine are protruded; for it is in such cases where the coils of intestine envelope your finger that you run the risk of wounding the gut. The use of the knife does away with the necessity of using a director—an instrument I do not care about employing.

Through the kindness of Mr. Corley, Richmond Hospital, Dublin, I am able to show you a knife which he specially designed to be used in cases of femoral hernia, to avoid cutting an abnormal obturator artery.

After division of the stricture I invariably endeavour to pull down into the wound a portion of the bowel, to see that it is entirely free, and to have a view of the strictured portion. Should the intestine not readily come down, and you feel quite certain there are no adhesions at neck of sac, caution should be observed lest you may lacerate a portion of inflamed bowel above the seat of stricture.

A few years since I operated upon a case of inguinal hernia, and ineffectually endeavoured to follow my usual custom of seeing the strictured portion of gut. The patient afterwards died from a lung affection, and upon *post-mortem* examination I found the mesentery corresponding to the affected portion of intestine so tense that it would have been utterly impossible to bring down the intestine without doing irreparable damage.

In only two cases have I experienced hæmorrhage of any moment—once when I accidentally wounded the gut, and once in a case of entero-epiplocele, where I divided an omental artery. Since the occurrence of these two cases I always, before dividing the stricture, request my assistant to make slight traction upon the intestine or omentum. By so doing you widen out the omentum, and run less risk of dividing any of its vessels, and prevent the intestine from overlapping the sides of the finger used as a guide.

In one case of entero-epiplocele, where I feared in dividing the seat of stricture I might open an omental artery, I first removed the mass of omentum. The intestine was at once easily returned into the abdomen. The omentum was the cause of strangulation.

In dealing with omental hernia, the mass must always be carefully examined to see that no intestine is contained in an omental

sac. Having satisfied myself that I have only omentum to deal with, I pass a catgut or chromocised gut ligature around it, close to the neck of the sac, and secure ligature by the Staffordshire knot, and cut off the entire protruded mass. This practice I have followed in all my omental cases. When a large mass of intestine is down, and there is much difficulty in reducing it, I have found that on enveloping it in cloths wrung out of warm water the intestine seems at once to shrink up, and reduction is easily effected. I have seen disastrous results follow the use of even a very fine trocar, to allow air to escape.

When the stricture has been divided and hernia returned, it is wonderful the amount of peritoneal fluid which flows away. In one case, which I saw with Dr. Whitla, fully two pints of fluid flowed away during the three days subsequent to the operation. Paget speaks of this fluid escaping, and says—"I do not know any rule of practice but that you must let it run as long as it will, and if it be of unsound appearance not close the wound till the fluid has ceased to flow, if even then."

In many cases, where the hernia has been of recent origin, I have endeavoured to perform a radical cure at the time of operation by ligaturing the sac with catgut, close to the neck, and cutting the sac off, close to ligature.

This treatment has been followed by satisfactory after-results, although in the majority of cases I request the patients to wear a lightly-made truss.

In two cases I sutured the pillars of the internal and external abdominal rings with silver wire, but the wires in about three weeks' time came to the surface, and had to be removed.

I have seen my colleague, Mr. Fagan, perform torsion of the sac—the practice advocated by Dr. C. B. Ball, of Dublin; the results were good. In several cases I have sutured the sac with fine cat-gut; using this means of cutting off deleterious matter from the abdominal cavity, when I expected a chance of inflammatory action in the soft parts, leaving a drainage tube outside sac. Before closing the wound I wash it out with the liq. hydrag. perchloridi, 1–2000; use silver wire sutures, a pad of iodoform gauze, and over all a pad of wood wool, and a spica bandage.

As regards after-treatment, I at once, as a matter of routine, put the patient upon opium—dose being moderated according to age—and apply an ice-bag over the abdominal wall, suspended from a cradle, in close proximity to the inflamed intestine. I do not

use the ice-bag when the gut is gangrenous or showed evidence of impending gangrene. The ice-bag and opium are continued so long as any pain or tenderness upon pressure over the abdomen is experienced.

The local application of ice, according to Dr. Eade, of Norwich, abstracts heat, benumbs exalted sensibility, contracts the dilated and semi-paralysed vessels; and its especial effects have seemed to be to diminish abdominal distension, and to contract the volvulous writhings of the bowels, and thereby relieve pain and tenderness.

Occasionally after the operation the patient vomits a good deal; this vomiting being due to the anæsthetic, it is relieved by a cup of green tea. In cases where the vomiting has continued, and I felt confident it was not due to peritonitis, I have used with success the application of Liq. Epispasticus over the course of the vagi nerves in the neck. This treatment has been highly extolled by my friend, Dr. Harkin.

Hiccough is another troublesome symptom. I have tried a variety of treatments, including counter-irritation, morphin, creasote, and chloral; but have obtained the best results by the hypodermic injection of pilocarpin. My colleague, Dr. Nelson, in a case, suggested a plan which he told me is commonly used in Vienna—*i.e.*, pressure applied to the roof of the mouth by the palmar surface of the thumb. The thumb is placed behind the incisor teeth, and firm pressure is kept up for five minutes at a time. My patient stated he obtained considerable relief from keeping up firm pressure. Should peritonitis of a severe nature arise, I order ten or twelve leeches to be applied over the abdomen, provided the patient be strong, continuing the use of the ice-bag and opium. Should the tympanites be excessive, I have great faith in turpentine stupes; and if the case has gone beyond the fourth day, and the pulse and temperature are normal, I order an enema of castor-oil and turpentine.

I have lately heard that peritonitis yields quickly to bryonia in combination with aconite. The treatment by salines of peritoneal inflammations occurring in hernia cases I have had no experience of; but I have seen the salines of much benefit in peritonitis following ovariotomy. I think the bowels should be acted on by the fifth day by enemata. Specially should we be anxious for the bowels to act in elderly or fat people; as Mr. Jordan,[a] of Birmingham, states that the cause of death after hernia operations is frequently due to fatty degeneration and failure of the muscular wall of the gut.

[a] Brit. Med. Journal, April 26th, 1879.

My colleague, Dr. O'Neill, had a death after hernia operation. Although the seat of stricture was completely relieved, the symptoms of strangulation continued. Upon *post-mortem* examination we found extensive fatty degeneration of the muscular wall of the gut.

In several of my cases the bowels acted almost immediately after the operation. Sir James Paget does not consider the early action of the bowels a good sign, as it generally "indicates either the effect of the purgatives, wrongly given before the operation, or some irritation of the bowel, which would be better at rest." I have seen no bad effects from the early action of the bowels.

In cases where the bowel at time of operation looked very dark, we should be slow in stimulating the bowel to act. I operated upon a lady for strangulated femoral hernia. The bowel looked to me almost gangrenous; however, I returned it, as its elasticity was still good, and the peritoneal coat was not sticky. Her medical attendant on third day administered copious enemata of olive oil, which did not come away. On the fifth day the nurse observed some oil oozing from the wound. Here, no doubt, a small fæcal fistula formed, which was treated by absolute rest, cleanliness, and a little pressure. All went well.

I had two cases of supposed fæcal fistula, which caused me much anxiety. One was a case of strangulated umbilical hernia. At the time of the operation there was a good deal of hæmorrhage into sac and superficial parts. On the fifth day a quantity of dark fluid of a very fœtid odour escaped, and continued to discharge for two days; the patient eventually recovered. In this case I believe the discharge came not through a fæcal fistula but from some blood in the sac which had decomposed. The other case was one of strangulated femoral hernia, in which much taxis had been used. After the operation there was for several days very fœtid discharge, which I believe was caused by suppuration of the sac; but it resembled very much a case of fæcal fistula.

Two cases of abdominal incision were made for the relief of symptoms of strangulation occurring in patients who had been for years the subjects of a reducible hernia.

The first occurred in a man who had for years suffered from an irreducible hernia. He was suddenly seized with symptoms of strangulation, everything pointing to an internal strangulation.

Upon consultation it was determined to explore the sac and then prolong, if necessary, the incision up into the abdominal wall. We

found an old hernial sac, containing some fluid, but no intestine. The incision was then prolonged upwards, which necessitated division of the deep epigastric artery. I could not find the cause of obstruction. Upon *post-mortem* examination I made a median incision, at once coming down upon a piece of ileum constricted by a tight band. Had I at once performed laparotomy in the median line, the patient might have been saved.

Billroth recommends, in similar cases, median incision, and says:—"The lateral wound throughout the muscular abdominal wall, the consequent hæmorrhage, and especially the difficulty of uniting the incision by sutures, together with the pressure which has to be exerted upon the wound, are all conditions unfavourable to rapid healing."

The second case of laparotomy was performed upon a young man who suffered from a congenital hernia, and had worn a truss for years. Three days before I saw him he had suffered from pain in the abdomen. His father thought the symptoms depended upon the hernia being down, and pushed it back. The symptoms now increased in severity, and I visited him at the expiration of 70 hours. He had well-marked symptoms of internal strangulation. No hernia could be felt. There was much tympanites. I operated, and without much difficulty found a portion of constricted bowel close to the cæcum. It was surrounded by a thin band of mesentery. The band was divided. Much difficulty was experienced in returning the distended intestines. Within one hour after operation patient felt quite relieved, vomiting ceased, and his bowels acted. Unfortunately, ten hours after operation, when all appeared to be going on well, he died quite suddenly. No *post-mortem* permitted.

In my series of cases a few of peculiar interest have occurred, but I will just now recount them, reserving a more detailed account for a future occasion.

Two cases of the so-called Littré's hernia.

Case of two strangulated herniæ upon the same side.

Two cases of congenital inguinal hernia, in which the constriction did not exist in the canal, but at a septum in the scrotum, through which the gut had passed.

One case where a woman had been operated upon three times for strangulated femoral hernia before coming under my notice, my operation being the fourth. Here I performed a radical cure.

Two cases of inguinal hernia, where large cysts were found

lying in front of the sac, rendering it very difficult to say whether or not the sac had been reached; and

One case of direct inguinal hernia where the intestine passed through the fibres of the conjoined tendon.

ART. IV.—*Medical Education and Examinations in* 1887.[a] By JOHN WILLIAM MOORE, B.A., M.D., M.Ch., Univ. Dubl.; Fellow and Registrar of the King and Queen's College of Physicians, Ireland; Physician to the Meath Hospital, and Lecturer on Practice of Medicine in the Carmichael College of Medicine, Dublin; ex-Scholar of Trinity College, Dublin.

GENTLEMEN,—On Tuesday, February 16, 1886, the first session of the Carmichael College Medical Science Association was inaugurated in the presence of a large and influential gathering, assembled within the walls of this College. The institution of a scientific debating society in connection with one of the largest extra-mural medical schools in Dublin was an incident of no ordinary interest. Some of the many friends who were present on that occasion may have had misgivings as to the success of the "new departure," but I feel sure that all, without exception, hoped—even if they did not expect—that the undertaking would more than justify the anticipations of its promoters.

> Ἰητρὸς γὰρ ἀνὴρ πολλῶν ἀντάξιος ἄλλων,
> Ἰούς τ' ἐκτάμνειν, ἐπί τ' ἤπια φάρμακα πάσσειν.
> —HOMER, *Il.* xi. 514, 515.

Nearly two years have since then rolled by, and the records of the Association amply testify that the forebodings of the few have been falsified, while the hopeful good wishes of the many have been realised. Under the able and fostering presidency of Dr. Samuel Gordon, in the first session, and of Dr. Corley, the President of the Royal College of Surgeons, in the second, the Medical Science Association has achieved a solid success—thanks mainly to the enthusiastic zeal with which the members have ever striven to advance its interests.

The Honorary Secretary has kindly furnished me with particulars as to the work done by the Association in the two past

[a] Presidential Address delivered on the occasion of the opening of the Third Session of the Carmichael College Medical Science Association, on Tuesday, November 22, 1887.

sessions, and on hearing those particulars you will, no doubt, agree with me in the high estimate of the value of the Society's work which I have formed.

During the first session, which commenced as late as Feb. 16, 1886, three ordinary meetings were held. At the first of these, held on February 23, papers were read by Mr. O'Meara, on "Renal Abscess;" Mr. Hugo, on "Complications of Croupous Pneumonia;" Mr. De la Roche, on "Tumour (Fibroma) of the Sciatic Nerve;" and Mr. M'Naboe, on "Fracture of the Clavicle." At the same meeting Mr. Scott exhibited a dislocation of the elbow; Mr. Williams, a series of microscopical specimens; and Mr. Zimmer, a gunshot wound of the cranium.

On March 9 there were papers by Mr. Penrose, on "Excision of the Ankle-joint;" Mr. Ford, "Case of Abortion;" Mr. Pollard, "Fracture of the Patella;" and Mr. Williams, "Case of Uræmia."

The third and last meeting of the session took place on March 23, when the communications were six in number—Mr. Healey, on "Extraction of Foreign Bodies from the Bladder;" Mr. Costello, on "Olfactory Paralysis;" Mr. Pim, on "Extraction of a Foreign Body from the Knee-joint;" Mr. Cox, on "Cancer of the Stomach;" Mr. Scott, on "Floating Kidney;" and Mr. Hugo, on "Serous Cyst of Muscle." The Exhibitions on this occasion were—Dr. Tichborne, "Lanolin;" Dr. Werner, "Head of Tænia Solium;" Mr. Broomfield, F.R.C.S.I., "Model of Accommodation;" Mr. Carey, "United Impacted Extra-capsular Fracture;" and Dr. Macan, "Tumour of the Ovaries."

During the second session—that of 1886–87—five ordinary business meetings took place. The first was held on December 14, 1886, when papers were submitted by Mr. Morris, on "Myxœdema;" Mr. Dunne, on "Epulis;" Mr. Ford, on "Saturnism;" and Mr. Dalton, on "Stricture treated by Electrolysis." The second meeting was on January 25, 1887, when communications were made by Mr. Penrose, on "Lumbar Colotomy;" Mr. Cane, on "Splenic Enlargement;" and Mr. Healey, on "Pes Planum." Exhibits were shown at the same meeting by Mr. Fagan ("Thoracic Aneurysm") and Mr. Vereker ("Tubercular Cervical Glands").

At the third meeting, on February 8, Mr. Falkiner read a paper on "Strophanthus;" Mr. Hamilton one on Anæmia;" and Mr. Morris one on "Progressive Muscular Atrophy." On Feb. 24, the communications were—Mr. Fagan ("Tetany"), Mr. Dn Cane ("Tumour in Orbit"), Mr. Dunne ("Prostatic Diseases"). At

this meeting also Mr. Penrose exhibited a specimen of "Carcinoma Recti."

The fifth and last meeting of the second session was held on March 28, 1887, when Mr. Burns read a paper on "Organs of Locomotion in the Animal Kingdom," and Mr. Du Cane one on "A Case of Abdominal Tumour." At this meeting Dr. Ninian Falkiner showed the Thallioquinine Test.

The foregoing list of papers and exhibitions bears eloquent testimony to the vigour and usefulness of the Association in the past, and affords a needful stimulus to active effort in the coming session. Were I asked to supply an appropriate motto to be emblazoned on the escutcheon of this Society, I would suggest the words "*Crescit eundo*," as eminently suitable for a body possessed of so much "go" as it has proved to be. That it may flourish and increase year by year should be the earnest wish of everyone who has at heart the best interests of the students of the Carmichael College of Medicine.

The twenty-fifth of June, 1886, is a memorable day in the annals of Medicine in the United Kingdom. The Medical Act, 1886 (49 and 50 Victoria, chapter 48), on that day received the Royal Assent, and became the law of the land. By certain provisions in the first part of that Act, nothing short of a revolution has been effected in the method of admission to Medical Practice—at all events so far as the Medical Corporations (as distinguished from the Universities) are concerned. The second section of the Act provides that "on and after the appointed day a person shall not be registered under the Medical Acts in respect of any qualification referred to in any of those Acts, unless he has passed such qualifying examination in Medicine, Surgery, and Midwifery, as is in this Act mentioned." The third section defines a "qualifying examination" as "an examination in Medicine, Surgery, and Midwifery held, for the purpose of granting a diploma or diplomas conferring the right of registration under the Medical Acts, by any of the following bodies, that is to say:—

"(*a.*) Any University in the United Kingdom or any Medical Corporation, legally qualified at the passing of this Act, to grant such dipolma or diplomas in respect of Medicine and Surgery; or—

"(*b.*) Any combination of two or more Medical Corporations in the same part of the United Kingdom who may agree to hold a joint examination in Medicine, Surgery, and Midwifery, and of whom one at least is capable of granting such diploma as afore-

said in respect of Medicine, and one at least is capable of granting such diploma in respect of Surgery; or—

"(*c.*) Any combination of any such University as aforesaid with any other such University or Universities, or of any such University or Universities with a Medical Corporation or Corporations, the bodies forming such combination being in the same part of the United Kingdom."

The section goes on to recite that "the standard of proficiency required from candidates at the said qualifying examinations shall be such as sufficiently to guarantee the possession of the knowledge and skill requisite for the efficient practice of Medicine, Surgery, and Midwifery, and it shall be the duty of the General Council to secure the maintenance of such standard of proficiency as aforesaid"—the machinery provided for the attainment of this end being periodical visitations of qualifying examinations by Inspectors appointed for the purpose by the General Council.

It will be observed that the great principles of the reform in examination and licensing effected by the foregoing provisions are two in number—*first*, the simultaneous examination and licensing of candidates in the three branches, Medicine, Surgery, and Midwifery; and, *second*, the visitation of qualifying examinations so as to secure a requisite standard of proficiency. In effecting the former of these objects the Medical Corporations have been virtually deprived of their separate licensing powers and so far disfranchised, while the Universities have had their powers confirmed and enlarged. So far as the ancient teaching Universities, which require a full curriculum in Arts as well as in Medicine, are concerned, there is nothing to complain of in the new system—and the same remark perhaps applies to such highly efficient examining Universities as those of Edinburgh and London, the Victoria University, and the Royal University of Ireland. But that the Medical Act of 1886 should practically disfranchise the Royal Colleges of Physicians and Surgeons in each of the three divisions of the United Kindgom, ignore the vast difference there is between the teaching Universities and those institutions, particularly in Scotland, which are Universities only in name, and confer on these last the right of qualifying candidates for registration as Practitioners in Medicine, Surgery, and Midwifery, is an anachronism, an indefensible act of injustice to the Royal Colleges, and little short of a national disaster. For consider the traditions of those Royal Colleges—in England, in Scotland, and in Ireland

they are the repositories of medical learning and science; in their libraries and museums the history of Medicine and Pathology is written; in their classical halls the various Medical Societies find a meeting-place and a home; their Fellowships are the blue ribbon of the Profession of Medicine, and its bead-roll of honour is the long and illustrious list of the distinguished men who have occupied their Presidential Chairs.

The one bright ray in the darkness is that in England, Scotland, and Ireland alike, the Colleges of Physicians and Surgeons have been drawn more closely together, and an *entente cordiale* between Medicine and Surgery has been established. In proof of this witness the scene in the Hall of the King and Queen's College of Physicians on Friday, November 11, 1887, when the President and Council of the Royal College of Surgeons in Ireland joined with the President and Fellows of the College of Physicians in a ceremonial for conferring the Diplomas of the two Colleges on the candidates who had been successful at the recent Final Professional Examination under the Conjoint Scheme.

But if grave objection can and should be taken to this apotheosis of the so-called Universities at the expense of the Royal Colleges of Physicians and Surgeons, what shall be said of the extraordinary achievement by which the General Medical Council have raised the Society of Apothecaries of London and the Apothecaries' Hall of Dublin to the dignity in each case of a Medical University? These (in their own way) most useful institutions, are now qualified to examine and to license in Medicine, Surgery, and Midwifery for purposes of registration, with the magical aid of two or three assistant examiners in surgery appointed by the General Medical Council!—and this at a time when the registration powers of the Colleges have been abrogated. "On and after the appointed day a person shall not be registered under the Medical Acts in respect of any qualification referred to in any of these Acts, unless he has passed such qualifying examination in Medicine, Surgery, and Midwifery, as is in this Act mentioned"—so runs the second section of the Medical Act, 1886, and it sounds the death-knell of the registration powers hitherto held by the Royal Colleges singly and acting independently of each other.

But, perhaps, it will be more prudent on an auspicious occasion like the present to avoid matters of controversy, and I will dismiss the topic with the remark that the Medical Reform, for which there has been an unceasing agitation ever since the Medical Act of 1858

became law, has resulted in a series of paradoxes. It has recognised no distinction between the teaching and the non-teaching Universities, has in part disfranchised the Royal Colleges, and has conferred upon the Apothecaries' Societies powers of examination and of registration which might well be envied by a Medical University. An ardent lover of the Profession of my choice, most heartily do I wish that such a measure of Medical Reform as the Act of 1886 had never been carried in its present shape. One reason for this is, that the Licensing Bodies were engaged in reforming the whole system of medical Education and Examinations in a legitimate way, untrammelled by State or Parliamentary interference. In proof of this contention, I would remind you that in my student days, twenty years ago, the teaching of Physiology was anything but systematic, while that of Histology was all but unknown. The study of Therapeutics was lost sight of in the less useful pursuit of a knowledge of Materia Medica, including the geographical, botanical, mineral, and animal origin of the drugs which have a place in the Pharmacopœia; and Examiners in both Medicine and Surgery too often required special answers to special questions, including the proper names of authorities, while practical knowledge was overlooked, and clinical examinations did not exist.

Now we have changed all that, and a practical bent is given to the student's education from his first year's work in the dissecting-room to his final examination in clinical medicine and surgery, and in practical surgery or surgical operations.

Do not mistake me, however. Long years before the term "clinical examination" was invented, or such tests of a student's practical knowledge were introduced, the great hospital teachers of Dublin throughout successive generations habitually drew attention to the advantages of bedside teaching and of bedside study.

In the few moments, which are still at my command, I would consider as briefly as may be the topics of Preliminary Education, Professional Education, and Qualifying Examinations.

At the opening of the Fifty-fifth Session of the Medical Faculty of M'Gill University, Sir James Alexander Grant, M.D., F.R.C.P. Lond., Consulting Physician to the General Hospital, Ottawa City, Ontario Province, delivered not many weeks ago a stirring Inaugural Address. His views on the subject of Preliminary Education are so sound and so convincing that I make no apology for quoting them at length. He says in the course of his address:—

"Let me here remark that, in my humble opinion, the very first step for a student of medicine is *the acquirement* of a good general education prior to entering upon the study of the profession. This has been found a difficulty in the past, but through the varied educational facilities now at the disposal of the youths of our country, a good practical education, embracing classics and literature, can be acquired. It is to be hoped the day is not far distant when those entering on the study of medicine will be required to take the degree of B.A. 'Tis true the professions are becoming crowded, and, consequently, those who wish to attain eminence must become proficient in all that fits a man for the highest stations in life. In order to command the respect of society and maintain the dignity of the profession, the medical man must know more than the mere practical duties of his calling. He ought to be the equal in point of general education of his associates in society. Thus he is enabled to uphold the dignity of his profession, which in time, by the adoption of a lower standard of education, would reduce one of the noblest callings in life to a level not even dreamt of in the remote days of Hippocrates. The life of the medical man is that of an every-day student. The term of study and observation is being constantly exemplified. The student in college will also be the student in practice. The foundation now placed will carry its appropriate superstructure. Human knowledge is never stationary: its very essence is progress. Theories accepted to-day may in a short time be disproved by additional scientific inquiry. Every day's experience will give you new and varied facts, and you must not rest satisfied with any fancied idea of perfection. Increase your knowledge and add to it daily, and even then times will arise when the difficulty of defining the varied manifestations of disease will be self-evident."

These are noble sentiments, and not less true than noble. They have long been held by the foremost thinkers and writers of our own land. In a Discourse on "Medical Education in the University of Dublin, delivered at the opening of the Session of 1864–65 in the School of Physic in Ireland," the late Dr. William Stokes, then Regius Professor of Physic in the University, observes:— "We have good grounds for hope that the principle to which the University of Dublin has steadily adhered, of insisting upon a full mental culture as ancillary to the obtaining of a medical degree, will in time be followed by other bodies whose powers in controlling Medical Education are so large. . . . You are not to under-

stand that I advocate the idea of an absolute uniformity in education or instruction. Such a state of things might not be desirable, even if it were possible; but great principles can be adopted, although the details of their working may vary according to many circumstances. . . . These principles may be shortly stated to be—First, that the aim of all education should be, not so much the accumulation of knowledge, as the preparing of the mind in the best way for its reception. Next, that in all cases, the larger the mental culture of the student, the greater will be his aptitude for receiving, advancing, or using any branch of special instruction or applied knowledge. Medicine requires to be served, fostered, and elevated. . . . It requires to be served, as it is a progressive science, demanding for its service an army of educated men to act as discoverers; it must be fostered, and it must be elevated, because, from the nature of man's mind, it has been long kept in an inferior position as compared with its sisters, Divinity and Law—because a large proportion of those who enter it are trained as if they were to be members of a caste, and not of a profession; and, lastly, on account of the facility with which it can be—and is too often—degraded to the level of a trade."

We are still very far from the realisation of Dr. Stokes's anticipations. Nevertheless, some progress has been made in this direction, and the General Medical Council has for some time required evidence, before registration as a medical student, that the candidate has passed a Preliminary Examination in General Education, the subjects of examination being—the English language, including grammar and composition; Latin, the Elements of Mathematics, Elementary Mechanics of Solids and Fluids, comprising the Elements of Statics, Dynamics, and Hydrostatics; and one of the following optional subjects:—Greek, French, German, Italian, or any other Modern Language; Logic, Botany, Zoology, or Elementary Chemistry.

As regards Medical Education, two noteworthy reforms have been carried into effect of late years. The first is the introduction into the curriculum of practical courses in the more important subjects of medical study. The second is the substitution of Sessional Examinations for the time-honoured "Half" and "Final" of former years. Even in the first year of Professional Study the student is now obliged to attend courses of Practical Chemistry and Practical Pharmacy, in addition to the old existing course of Practical Anatomy. In the second year, attendance on a course of

Practical Physiology, including Histology, is required. In the second, third, and fourth years, hospital case-taking and attendance upon fever cases are imperative; besides which a course of Operative Surgery, one of practical midwifery, and one of clinical lectures on Ophthalmic and Aural Surgery are distributed over the third and fourth years.

As a necessary consequence of this practical "bent" in the curriculum, the sessional examinations have become more and more practical. At the First Professional, there is a Practical Pharmacy test; at the Second, the candidates are examined practically in Anatomy, Histology, and Chemistry; at the Third, there are dissections; at the Fourth, there are clinical examinations in Medicine, Surgery, and Ophthalmic Surgery, as well as a searching examination in Operative Surgery. This is as it should be; and I have no doubt that the more medical students will ponder on the responsibilities of the profession they are seeking to enter, the more disposed they will be to acquiesce in the necessity for applying practical tests of their knowledge at every stage of their studies.

In a very able address, delivered at the opening of the present session in the School of Surgery of the Royal College of Surgeons, Sir William Stokes vindicated the new curriculum and the system of sessional examinations from the hostile criticism which has been launched against these great reforms. He said of the latter:—

"The sessional system of examination authoritatively emphasises the necessity for abandoning for ever the method that formerly was too prevalent, of leaving to the last few months of pupilage all honest and earnest effort to master merely a sufficiency of anatomical and surgical details to satisfy the examiners. It is not too much to say that this system was as discreditable as it was pernicious to all concerned—students, teachers, and examiners—and it is amazing how it was tolerated by the authorities for so long a time. You are to be congratulated, instead of being sympathised with, at the extinction of such a system, and at joining the ranks of our profession when the student in medicine occupies a far different and far higher position in public estimation than formerly was the case, and when the being, so ably satirised by Albert Smith and Dickens, who, fashionably dressed, vaguely 'walked the hospitals' in the morning, and subsequently, in the afternoon, was an ardent 'Fire Worshipper' in the dissecting-rooms, is no longer to be found."

A discourse on "Medical Education and Examinations in 1887" would not be complete without some reference to the crusade which has been proclaimed by some of the Medical and Examining Licensing Bodies against what are called "Night Lectures," or more properly "Evening Lectures." The language of Billingsgate has been exhausted in the attempt to discredit the system of providing means for a deserving class of students to fulfil the requirements of the curriculum. My defence of the system is based on three facts :—

First, that "Evening Students" have more than their share of prizes in our schools and hospitals :—In the Carmichael College, during the Session of 1885–86, the prizes in Botany, Zoology, and Materia Medica, were carried off by a member of the "Evening Classes." In 1886–87, the Carmichael Scholarship, and likewise the Chemical Prize, were won by an "Evening Student;" and in October, 1886, a gentleman took the Degree of M.D. in the Royal University, on a very high standard of answering, who was also a member of its "Evening Classes." In the Ledwich School the prizes in Anatomy and Surgery were carried off this year by members of the "Evening Classes;" and within the last few years members of these classes carried off prizes in Practice of Medicine and Pathology, in Surgery, in Midwifery, in Chemistry (Theoretical and Practical), in Medical Jurisprudence and Hygiene, and last, not least, in Clinical Medicine at hospital.

Second, that to my own knowledge "Evening Students" have studied diligently in the hospital wards, have been good case-takers, and have passed their final examinations on excellent, sometimes on brilliant, answering.

Third, that the justice of affording facilities to men, who in the face of the greatest difficulties exhibit untiring energy in their efforts to enter the profession of Medicine, has been conceded by such leaders of medical thought and progress as Dr. Banks, the Regius Professor of Physic in the University of Dublin; Dr. Anthony H. Corley, President of the Royal College of Surgeons in Ireland; Dr. R. M'Donnell, President of the Royal Academy of Medicine in Ireland; Dr. S. Gordon, President of the Carmichael College of Medicine and ex-President of the King and Queen's College of Physicians; and, last not least, Dr. Francis R. Cruise, also an ex-President of the College of Physicians, and champion of the cause of Evening Students before the Senate of the Royal University of Ireland. Hear what Dr. Cruise has to say upon the

subject:—"I never met a student who entered the profession under the difficulty of working at unusual hours, who was not a man of exceptional ability, perseverance, and merit. I could point out some who attained their profession under such conditions, and who are now in high positions. It always appeared to me that these students contrasted very favourably with their more fortunate compeers, who enjoyed the full advantages of leisure and means, and were deserving of assistance rather than opposition. I cannot for a moment sympathise with or give my aid to any course which would increase the difficulties of those whom I feel it a duty and a pride to help."

Gentlemen, I have endeavoured to sketch for you in the foregoing remarks the present state of Medical Education and Examinations in this country. May I add, what is at once an earnest conviction and a heart-felt aspiration, that, when the initial friction of the new machinery will have given place to smooth and easy motion, our noble Profession may enter upon a glorious career of ever-increasing usefulness, and win fresh triumphs over disease and death. Its title-deeds to rank as indeed a "learned Profession" will that day be sealed, when all its members will come to feel, with Bacon, that "Knowledge is not only Power, but it is Pleasure."

It remains for me only to declare the opening of the third Annual Session of the Carmichael College Medical Science Association, and to express the hope that it may be as successful and as useful as those sessions which preceded it.

CIRRHOSIS OF THE LIVER, WITH CONTRACTION OF THE FISSURE FOR THE VENA CAVA.

THE patient, a male, aged fifty-four, hard drinker, admitted to St. Louis Hospital for ascites. The most interesting feature of the case is a loud, blowing sound, heard most distinctly over the apex of the ensiform appendix. This sound is constant, increased in intensity by inspiration, and diminished by expiration and suspension of respiration. It is not affected by the heart's action. No throbbing or pulsation is felt over the site of the *bruit*, but slight palpitation discovers a very fine, constant crepitation, simulating the feeling of a slight amount of air in the cellular tissue. Autopsy.—Liver weighed 47 oz., covered with hobnail irregularities; dense and hard; no blood flowed from its cut surface. The fissure for the vena cava was almost a canal, was somewhat contracted, and its walls were hard, admitting the little finger with difficulty.—*St. Louis Courier of Medicine*, February, 1887.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

A Treatise on the Animal Alkaloids, Cadaveric and Vital; or the Ptomaines and Leucomaines, Chemically, Physiologically, and Pathologically Considered in relation to Scientific Medicine. By A. M. Brown, M.D. With an Introduction by Prof. Armand Gautier. London: Baillière, Tindall & Cox. 1887. Pp. 182.

On the Animal Alkaloids, the Ptomaines, Leucomaines, and Extractives, in their Pathological Relations; being a Short Summary of Recent Researches as to the Origin of some Diseases by or through the Physiological Processes going on during Life. By Sir William Aitken, M.D., F.R.S. London: Lewis. 1887. Pp. 61.

These two works cover almost exactly the same ground. Indeed, Sir W. Aitken's book professes to be little more than a summary of that of Dr. Brown, with some additions drawn from the writings of Dr. Lauder Brunton; while Dr. Brown's treatise is a summary of work done on the Continent, mainly by Professor Gautier. In neither case does the writer appear to have any personal acquaintance with the subject of which he writes. Neither Dr. Brown nor Sir W. Aitken seems to have ever extracted an animal alkaloid, or to have ever made any experiments on the action of this class of bodies. The works before us are, therefore, mere literary productions.

In style, Sir W. Aitken's lecture is, like all the other works of the same author, written with clearness and elegance, while Dr. Brown seems to have studied composition in the remarkable educational work called "English as She is Spoke." We shall give a few extracts illustrative of Dr. Brown's style. Speaking of the changes which take place in a dead body submitted to putrefaction, he says:—

"Loss of heat, rigidity, and discoloration of the subject, follow in succession, and, as with the carcase fragments, if not so markedly, soon acquire an acid odour, accompanied with copious clear albuminous exudation; carbonic acid and hydrogen gases are disengaged, and during

the first stage without a trace of nitrogen. The mass medium exhibits a progressive *rôle* of fermentation, at first lactic, then butyric, and looks as if it had been sweetened."

He continually speaks of substances having a *virous* odour, whatever that may mean, and almost invariably speaks of a mixture as a "melange;" cuttle fish are called "cephalode pulps," and carbon dioxide the "anhydide carbonic." The following is the description of the effect on a frog of ptomaïns extracted by chloroform when injected into the "subcellular tissue":—"Slight agitation, flaccidity of the muscles, and loss of motor power under galvanic current, nervous sensibility maintained, but no contractility elicited when the electroid was not in direct contact with the muscle or muscles themselves." We read of an alkaloid occurring in "well-defined chlorate crystals." This description is reproduced in Sir W. Aitken's book. Phospho-tungstic acid is called in one place *phospho-tungestic* acid, in another *phosophate-ungestic*. On p. 88 we learn that the "kreatinine leucomaine group forms a natural series, the terms of which are homologous, as regards CNH—that is to say, that they differentiate by the cyanhydric arrangement, as the carbonate homologues, for example, differ by the CH_2 groupment." The following is the definition of life:—

"Life is the consequence and the resultant of the mode of aggregation, and the mechanical and chemical properties of plasmic materials and their formal parts. They perpetuate and undergo modification by continuity in transformation of the molecular conditions and the physico-chemical phenomena which take place in these aggregations developed under the influence of similar aggregations pre-existent."

Again—

"Undoubtedly it is in consequence of the splitting up of dissimilations brought about at the expense of the tissues themselves, and in contact with oxygen, that all the disintegrative phenomena are accomplished in the animal economy, and by the physiological activities of animal cellules grouped in tissue."

The principal accidents (? symptoms) of autotyphusation are said to be "hyperthermia, innervation, and hæmorrhage."

In his Latin Dr. Brown is as unfortunate as in his English. We read *natura non facit saltus;* and we hear of M. Chomel diagnosticating a case *aut febris peyerica aut variola incipientis.* And that this is not a printer's error is shown by the following sentence:—"So much for the hesitating diagnosis *febris peyerica;*

muscular and nervous pain expressed itself in rachialgia, so much for *variola incipientis*, included in the same." Sir W. Aitken, in quoting this part of Dr. Brown's book, considerately corrects the text.

We suppose it is as a compliment to M. Gautier, who, after the manner of French writers, contributes a preface calling attention to the great value of a work, on every page of which his own praises are extravagantly put forward, and in imitation of French authors in general, that Dr. Brown misspells the names of nearly all the authors which he quotes. Thus we have Schmiedeberg and Harnack transformed into Schmiedberg and Hartnack; Wurtz into Wartz; Grisolle into Gresolle; Gaffky into Goffky; Quinquaud into Quanquand, and so on.

So much for the manner of Dr. Brown's treatise. As to the matter, his work is divided into three parts. In the first he speaks of the cadaveric alkaloids, or those got from dead putrefying animal matter. He traces the history of their discovery, describes the methods for their extraction, and gives some account of their physiological action and of their medico-legal importance.

In the second part the alkaloidal substances which are found in the living body as products of metabolism are discussed. To these the rather inappropriate name of leucomaïns has been given because they are formed from albuminous, or at all events nitrogenous tissue.

In the third part, on the vital or physiological alkaloids, the leucomaïns, in relation to scientific medicine, we find the writer's own views put forward, together with those of some of his French friends. The main thing we are taught is that all those diseases which we have been learning to think reach us from without, are really due to causes developed within our bodies. That the fever following over-exertion is due to a morbid matter generated in the body, "and what does it matter whether morbific matter finds its way into the organism from without, or whether it is elaborated from within." That this poisoning is autotyphusation and passes directly into typhoid, which again stands half way on the road to petechial typhus. So these three conditions form "a natural typhoid morbid series." So sausage poisoning passes by insensible degrees into Asiatic cholera. And so of other diseases.

We regret very much to find Sir W. Aitken quoting with approval and giving the weight of his authority to such theories as these. He says "the military medical officers of former days

were wont to recognise this form of typhus (camp typhus) spontaneously developing itself in the Continental campaigns." This is quite true, and so were the housekeepers of those days wont to recognise the spontaneous development of maggots in their meat and of mould in their preserves.

Both Dr. Brown and Sir W. Aitken are not content to put forward this theory (or rather to reproduce it from its French source), but they in the most violent way assail the theory of the bacterial origin of zymotic diseases. Dr. Brown speaks of the efforts that have been made by Koch and other pathologists as "pangermism exhausting its energies in sensational demonstrations of bacterial surprises and bacillar blunderings." Sir W. Aitken says—"To hunt for new forms of microbes is a comparatively easy and perhaps an exciting form of sport." His scepticism is further excited by the attempts which have been made to photograph bacteria—"They are all so alike that no distinguishing features exist amongst them for differentiation." We must conclude that Sir William has never seen pure cultures of bacteria, or he would know that their "family likeness" is not so strong as he supposes.

As to the existence of the animal alkaloids there can be no doubt. That they cause poisonous symptoms when administered to animals there can be no doubt. There are numerous cases of poisoning in men by putrid meat, fish, &c., which may almost with certainty be attributed to ptomaïns contained in the substance eaten. But there is no certain evidence that any case of disease has arisen from the generation of poisonous alkaloids in the living body, however probable such an accident may be. The secretions of diseased persons contain poisonous substances, but so do the secretions of persons in perfect health. The sort of evidence adduced is that creatinin has been got from the urine in cases of uræmia (Brown, p. 136). We have for years been in the habit of extracting from perfectly healthy urine a substance which we looked on as creatinin, and we have reason to believe that this view is held by most chemists. Again, we are told that "uric acid is a product of animal life, and *one which is inconceivable apart from it.*"—P. 146. Uric acid has been formed synthetically, as Dr. Brown and Sir W. Aitken, who repeats this extraordinary statement, ought to know.

While, then, considerable doubt still hangs over the supposed cases of poisoning by leucomaïns, so-called, we think there are few persons capable of weighing evidence who will deny that in several

cases the bacterial origin of disease is proved. Sir W. Aitken feels himself driven to the conclusion "that at present the evidence regarding microbes tends to show that they are entirely *post hoc* as to their existence in relation to the antecedent factors of any particular disease." "They are unable to settle in a perfectly healthy body; they can only develop where the physico-chemical constitution of the tissues is morbidly altered so as to correspond to their requirements." Will Sir W. Aitken maintain that all the hundreds of rabbits and guinea-pigs who have become tubercular after inoculation with the bacillus tuberculosis were previously diseased? Will he deny that a healthy animal can be inoculated successfully with glanders? or that a healthy man inoculated with bacillus anthracis will get anthrax? Will he deny, after his military experience, that a healthy man may get gonorrhœa?

Sir William tells us that "no single man has yet accomplished by himself any notable discovery." We were under the impression that such men as Harvey, Newton, Dalton, and Faraday, had made discoveries which might fairly be called notable—but whether this be so or not, it is not by scoffing at scientific expeditions, or by talking of men "sitting down more or less comfortably to make a discovery," that advance will be made. Let Dr. Brown and Sir W. Aitken look back for fifteen years and compare what surgery was then and what it is now, and they will see whether the work of the men they call the pangermists is all "doctrines bolstered up by hazy, vague hypotheses."

Sir W. Aitken is anxious to climb some pathological Pisgah and be allowed to stand, as Moses stood, and view the promised land. If he did he would probably see a vista somewhat different from what he and Dr. Brown expect, and the view might probably make them more like the great lawgiver, who was the meekest man in all the earth.

In conclusion, we think it is much to be regretted that the important subject of which these books profess to treat was not brought before English writers by someone who could have treated of it from his own knowledge, and who would have confined himself to facts, and not have attempted to build on them a superstructure of theory which they are far from being able to support. Even Dr. Lauder Brunton, notwithstanding his great scientific attainments, is not free from the fault which we indicate.

Dr. Brown is apprehensive that his work will excite alarm if not amusement in the minds of pathologists. The foundations of

pathology are perhaps not very firmly laid, but we think there is no very great cause for alarm from any attempt to undermine them coming from Dr. Brown. As to the amusement, there is no accounting for taste. In our mind the amusement and the alarm are about equal.

RECENT WORKS ON VACCINIA AND VARIOLA.

1. *Vaccinia and Variola: a Study of their Life-history.* By John B. Buist, M.D. London: Churchill. 1887. Pp. 224.
2. *The Artificial Cultivation of Vaccine Lymph.* Competition Essay for Grocers' Company, London. First Quadrennial Discovery Prize of £1,000, 1883—1886. By John Dougall, M.D. Glasgow: Alex. MacDougall, 1886. Pp. 60.

1. We reproduce, in his own words, the summary of his results given by Dr. Buist:—

"1. The bacteric form of the true vaccine contagium is to be found in the minute isolated spores of micrococci, which are suspended in standard vaccine lymph, and this form must be preserved in artificial vaccine materials.

"2. Opaque vaccine lymph contains more mature bacteric forms developed from the spores in clear lymph, and is to be regarded as a natural cultivation of the true vaccine contagium.

"3. The torulæ described in opaque lymph do not exist in clear lymph, and their significance is doubtful, but most probably they represent a resting or reproductive stage of existence of the vaccine contagium.

"4 Stored lymph undergoes acid fermentation unless preserved in a dry state, the alkalinity of standard lymph being favourable to the continued multiplication of the spores which it contains.

"5. The chemical change thus produced in lymph suggests the opinion that the vaccine contagium is a vegetable ferment which has become acclimatised in warm-blooded animals.

"6. The bacteric forms found in standard and opaque lymph have undoubted pathogenic properties.

"7. The vaccine contagium can be isolated and cultivated apart from the animal body, in both solid and fluid media.

"8. By artificial cultivation in solid media, the bacteric forms found in opaque lymph are reproduced, but in much greater quantity. These forms do not exist in standard vaccine lymph.

"9. By artificial cultivation in Quist's fluid (blood serum, glycerine and water, of each 100, potassium carbonate 1) the bacteric forms found in standard lymph appear to be reproduced, the fuller development of these

into growth-forms being probably prevented by the action of the glycerine which it contains.

"10. The corresponding variolous materials also contain the embryonic and mature bacteric forms found in standard vaccine lymph and cultivations.

"11. The properties of pure dried yeast and diastase are very similar to those of the vaccine contagium.

"12. Experimental vaccination prove that natural and artificial vaccine materials differ in potency as well as in composition.

"13. The embryonic natural material (*i.e.*, clear lymph) produces perfect local results, seldom secondary lesions.

"14. The mature natural material (*i.e.*, opaque lymph) produces more violent and imperfect local results, which are not unfrequently followed by secondary lesions.

"15. The developmental bacteric forms of the vaccine contagium, obtained by artificial cultivation, produce a rapid constitutional action, followed by secondary lesions, without any local result at the points of inoculation.

"16. Artificial cultivations of variola have a similar action, and the contagium apparently becomes less virulent.

"17. The pathogenic properties of the vaccine and variolous materials depend on the embryonic and mature forms of bacteria which they contain.

"18. The recognition of these pathogenic properties becomes difficult when only a constitutional result is produced by the modified materials.

"19. Experimental inoculation of dried yeast produces local irritation and fever, which shows that ordinary ferments have some pathogenic property. It appears to modify the action of the vaccine and variolous contagia, but is not fully protective against the action of either.

"20. It is probable that both yeast and diastase can become acclimatised in animals, and retain their power of exciting fermentation.

"21. Vaccination appears to consist essentially in the artificial growth of a vegetable ferment in an animal, under circumstances unfavourable to its rapid multiplication.

"22. Immunity is produced by gradual fermentation of the blood, and requires for its full explanation the combination of the exhaustion, ptomaine and metabolism theories of protection. Metabolism of the blood-cells must take place during the fermentative process. These transformed cells then become vital ferments, capable of effecting a similar metabolism of new material. The power gradually becomes exhausted, and the immunity ceases.

"23. Attenuation of the virus appears to be best explained by spore production, as the true vaccine contagium has been demonstrated to consist of spores. The difficulty in obtaining reliable vaccine material con-

sists in preventing these from developing into more mature bacteric forms, and this difficulty has to be overcome in artificial cultivations.

"24. Standard vaccine lymph, carefully propagated, as at present, is, therefore, in my opinion, the best and most convenient material that can be obtained for vaccination. My observations appear to show that when it is taken from a typical Jennerian vesicle, it is a material 'in the contagium of which no second principle can possibly reside.'"

This work, which is throughout of a strictly experimental character, will be found full of interest, not only for those concerned practically with vaccination, but for every pathologist. The different effects produced by clear lymph and by the natural and artificial cultures got from it are worthy of the closest consideration, as are the remarkable effects caused by inoculation of yeast. Many practical suggestions are scattered through the work. There are twenty-four coloured plates of great excellence, giving the appearance of the cultures and the results of inoculations, for the most part on monkeys.

2. The Grocers' Company proposed as a subject for their first prize of £1,000 the following question:—"To discover a method by which the vaccine contagium may be cultivated apart from the animal body in some medium or media not otherwise zymotic—the method to be such that the contagium may, by means of it, be multiplied to an indefinite extent in successive generations, and that the product, after any number of such generations, shall (so far as can within the time be tested) prove itself of identical potency with standard vaccine lymph."

The essay of Dr. Dougall was written in competition for the prize. He has not succeeded in discovering a means for the indefinite propagation of vaccine matter, although he has worked indefatigably for three years. He thus resumes the results of his labours:—

"On the whole, then, I am forced to conclude that my entire failure to cultivate the vaccine contagium out of the animal body arose, not from imperfect sterilisation, bad seed, improper mode of sowing, too low or too high temperature during incubation, wrong methods of incubation, too long or too short periods of incubation, but from some defect in the soil—in short, from the want of some peculiar zymotic pabulum or constituent absolutely essential for its reproduction. What this pabulum is I have not the least idea. I only know, with others, that vaccine contagium in contact with it in the animal body is multiplied, and it decomposed."

The Throat and its Diseases, including Associated Affections of the Nose and Ear. By Lennox Browne, F.R.C.S.E.; Senior Surgeon to the Central London Throat and Ear Hospital, &c. Second Edition. Re-written and Enlarged. London: Baillière, Tindall, & Cox. 1887. Pp. 614.

It is just nine years since we had the pleasure of reviewing the first edition of this work. The present volume, though in shape and size scarcely altered from its predecessor, is vastly different in every other respect. The book has been completely re-written, and the letterpress has been extended to something like treble the length of the earlier work. The engravings have been quadrupled, and twenty new coloured illustrations have been added. As we might have expected, the well-known artistic talents of the author are conspicuous in every one of the illustrations, the coloured ones being reproduced in a manner rarely to be seen in medical works.

We observe that in this edition Mr. Browne has incorporated much from his conjoint work on "Voice, Song, and Speech." The method of tone production in the various registers is carefully described, and the observed conditions of the various organs concerned in vocalisation are faithfully reproduced These are points which most works on the Throat studiously avoid, but which we are glad to see find a prominent place in a standard work.

We notice a suggestion in the chapter on Diseases of the Tonsils which we think is well worthy of adoption. The author points out that the term "follicular" tonsillitis is incorrect. The follicles in the tonsil play only a subordinate part. The exudation from the tonsil of a whitish, creamy, and offensive secretion comes chiefly from the lacunæ in the congested lymphatic tissues. He, therefore, whilst retaining the term follicular, venerable by its antiquity, prefers the term lacunar, which more correctly indicates the nature of this affection. In describing the differential diagnosis between this lacunar tonsillitis and diphtheria the author does not mention one of great practical utility. If a small piece of the exudation in tonsillitis be removed on the end of a probe and smelled, an offensive and characteristic odour is perceived, which is absent if the case be diphtheritic. The other points of differentiation are very well described.

Under the head of Diphtheria (Chapter XVII.) the author finds reason to object to the germ theory, as applied to this disease. "We must not hastily assume," he says, "that these organisms

(bacteria) are either the invariable cause, or the constant carriers of contagion; and it is probably safer, at present, to regard bacteria but as very frequent concomitants of the disease." He then goes on to offer what he calls the "ptomaine theory," if not as a substitute, at least as complementary. A ptomaïn, he thinks, is the chemical contagion, and that it "will stand in a somewhat stronger position than the germ or bacteria hypothesis." This ground, unless considerably modified, we believe is utterly untenable. We believe the author has failed to grasp the inter-dependency of germs and ptomaïns. No one supposes that the symptoms of poisoning in zymotic diseases are the immediate results of organisms. The organisms manufacture ptomaïns by the process of decomposing vital fluids, from which they draw their sustenance, and these ptomaïns are the products of the decomposition. Destroy the organisms, and the formation of the ptomaïns will be arrested. The fact that the special organism of diphtheria may not have been yet differentiated—which we cannot grant—does not affect the argument; for of this we are certain, that the poison of diphtheria, like that of other zymotic diseases, is a living poison. Its passage from one individual to another, through, perhaps, a long series, does not diminish its intensity or its quantity. It may be that the last of the series contracts the disease in a more virulent form than the first. This could not be the case were the poison a mere chemical substance. Were, therefore, a person to be infected by the ptomaïn conveyed from a diphtheritic patient, that person would be harmless to another, and the disease would soon die out. If we accept, which we do, that the diphtheritic poison is a ptomaïn, that belief will only strengthen and fortify our conviction in the truth of the germ theory.

There is little else in the book with which the most carping critic could find fault. We bestowed well-deserved praise upon the first edition when it appeared, but the present edition far outshines its predecessor. Though contemporaneous writers are duly recognised and quoted, the book is not a compilation merely of other men's views. It is a thoroughly clear, practical, and masterly work, the result of twenty years' experience of uninterrupted and exceptional clinical opportunities. It may not prove the most exhaustive work of reference to an author about to write a pamphlet on some branch of the speciality, but to the practitioner it will prove one of the most reliable, suggestive, and practical guides to which he could refer.

The publishers have done their part well. The letterpress is excellent, the paper good, and the binding all that could be desired. There is a fuller and more comprehensive index to this volume than was to be found in the last edition. It will prove a useful and ornamental addition to the medical library.

Report by Collective Investigation Committee of the Norwegian Medical Association on the Etiology of Rickets, Acute Rheumatism, Chorea, Cancer, Urinary Calculus. Christiania. 1887. Pp. 67.

It is to be feared that, however it may be in the future, Collective Investigation has not hitherto done as much for Medicine as was expected of it. Powers of observation, diagnosis, and classification vary so widely in various individuals that there must be corresponding variety in the value of the collected materials from which, taken in mass, without reference to the personalities of the collection, it is sought to deduce conclusions. The effects of errors of judgment and carelessness in grouping can be eliminated only by the accumulation of observations more numerous than have yet, in any instance, been collected. So far as the experiment has yet gone, it appears to us that more light may be obtained from the concentrated experience of one man, dealing with a subject to which he has devoted his thoughts and his life, than from the feeble and often conflicting rays emanating from a thousand twinkling points, and focussed more or less successfully by a Committee. Light, however, is welcome from any quarter, and in thinnest streams if fuller may not be had; and negative conclusions such as, for the most part, collective investigation has so far bestowed upon us, are better than none. In questions of ætiology the demonstration that antecedence or concomitance is accidental, not essential, helps us towards the discovery of the real cause.

The Report before us is a result of the International Medical Congress of 1884. We will give what seems to us to be the more important facts elicited by the investigations into the ætiology of the five diseases enumerated.

Of 500 Norwegian practitioners who might have assisted in the inquiries 75 reported 615 cases of *Rickets* for the quinquennium of 1882–6. 359 of these (58·4 per cent.) occurred in towns. 59·9 per cent. of the patients were males. The largest number (73) were aged from 12 to 18 months. In two cases only was there clear evidence of syphilis in the parents. As to food, subsequently

to weaning, "sufficiency" was reported in 100 cases out of 112; and in 37 cases out of 131 its quality was said to be unsatisfactory, from excess of starch, or of fat, or from deficiency of milk.

On *Rheumatism*, acute and sub-acute, 94 practitioners and the two medical departments of the National Hospital reported. The reports covered 973 cases, occurring in 1885 and 1886. As to season—

"With the exception of February, the number of cases for the first five months of the year have been about equal. From June the numbers decline somewhat suddenly in the following months, and gradually decrease until and including October. In November and December the numbers again increase. The maximum of cases occur in January, and the minimum in October."

Males under 10 were found to be much more liable to this disease than females of the same age. As to hereditary predisposition, in 16·4 per cent. of 682 cases one or both parents had suffered from rheumatic fever. In 150 of 226 cases the soil was described as damp, in 76 dry.

The chief points to notice in connection with *Chorea* are its connection with rheumatism and with cardiac disease. In 23·5 per cent. of 124 cases acute or sub-acute rheumatism had preceded the chorea. In only 14 per cent. of 121 instances was any heart affection reported to have been present. We may add that only in 15 per cent. of 106 cases did any other illness precede the attack of chorea.

As to *Cancer* 94 replies were received, relating to 531 cases; and our knowledge is not much increased thereby. 278 of the patients were males, 253 females—

"The age most numerously represented . . . is from 60 to 69; after which comes 50 to 59; then 70 to 79; then 40 to 49; 30 to 39 follows, then 80 to 89. Then follows, with a comparatively even number of figures, 20 to 29; and finally 0 to 9, likewise 90 to 100, which . . . have both the same numbers."

In 230 cases the absence of family taint is reported. In 54 of 291—(there is some confusion in the figures here)—or 18·55 per cent., relationship was observed.

In 42 cases of *Urinary Calculus* the character of the drinking-water is noted:—Soft without iron in 28, soft with a little iron in 5, hard in 9. Uric acid calculus occurred in 71 per cent. of the cases in which soft water, free from iron, was drunk; 14 per cent.

when a little iron was present, 14 per cent. where the water was hard. Soft water without iron was used in 67 per cent. of the cases of oxalate of lime calculus; with iron in 15 per cent., hard water in 15. Finally in all other cases the water is described as soft without iron in half, and hard in half.

Army Medical Department Report for the Year 1885. Volume XXVII. London. 1887. Pp. 473.

We are not without experience in the preparation of annual reports, and we venture to think that it ought to be possible for medico-military energy to produce the Report for 1885 before the middle of 1887. Passing over 308 pages of obsolete statistics, we turned to the Appendices, in which the Director-General delights to bury the special reports which he receives from all parts of the world. Some of these we found well deserving of exhumation and autopsy, and we shall give our readers the benefit of our researches.

The thorough and scientific examination of one large station throws more light upon the ætiology of a disease than the most industrious accumulation of facts and figures relating to different localities. Such complete examination, with reference to malaria, Surgeon R. H. Firth made in 1885, at Mecan Meer, the cantonment of Lahore, in the Punjâb. His paper is a model of what such inquiries should be. It occupies, exclusively of 5 pages of diagrams, nearly 12 pages of the volume. That Mecan Meer is a typically malarious station, and therefore eminently suitable for the inquiry which Mr. Firth undertook, is evident from the medical statistics of 1884. The average daily sick per 1,000 of strength (of the European garrison) was 129·8—a higher rate than that of any other station in India, with three exceptions: Taragash (Ajmere), 153·8; Purandhar, 144·9; Chunar, 129·9. The ratio of fever cases per mille was higher than in any Indian garrison except Delhi and Lahore Fort. Excluding enteric, the Mecan Meer fever admission-rate in 1884 was 239·5 per 1,000 of strength. The inquiry included nine points—the composition, temperature, ground-water, and carbonic acid of the soil; atmospheric temperature, pressure, and humidity; rainfall; and ozone. We shall summarise the results under each of these heads.

(1.) Analysis of the soil showed an excessive quantity of organic matter, not absolutely, but relatively to the vegetation supported.

The presence of constituents unfavourable to plant-life, aided by the dryness of the soil, produces comparative infertility, and may thus indirectly favour the generation of the malarial poison, to which living vegetation is the natural enemy. (2.) It was found that paroxysmal fever was more rife "during and just after the period of greatest equal daily soil-temperature." Least variation corresponds with most malaria—a coincidence held to be confirmatory of the view that this poison depends upon increased activity of chemical processes in the soil. (3.) The level of the ground-water appeared to have little, if any, connection with malarial fevers, though there was an increase of these diseases in the month immediately following a rise of ground-water. Nor could any relation be traced of ground-water to enteric fever in the year of observation. (4.) Carbonic acid in the soil increased with the temperature of the ground, and was at its maximum when the daily range of soil-temperature was least; in other words, when change in the soil was most active carbonic acid was most abundant. The amount of the gas present "is merely the index of the chemical activity in the soil, which again is followed in a week or so by increased malarial prevalence." (5.) As to air-temperature, Mr. Firth's observations, so far as they go, are unfavourable to the belief which prevails in some quarters, that increased development of malaria is a result of greater diurnal variation of air-temperature. He found no correspondence between the maximum of daily variation of temperature and the maximum of malarial prevalence. The widest temperature-range occurred (on an average of five years) in March, April, May, November, and December; whereas malarial fevers were increasingly prevalent in July, August, and September. (6.) No relation between malaria and barometric pressure could be detected. (7.) Connection between atmospheric humidity, simply, and malaria was not made out, but it appeared that immediately after a period in which high temperature and high percentage of humidity were combined the intensity of malarial effects reached its maximum. Mr. Firth noted two remarkable facts in connection with this head—firstly, that the range of humidity, within 24 hours, was sometimes very great—on one occasion from 14 at 4 p.m. to 72 at the following 4 a.m; secondly, that the humidity-curve and the rain-curve did not coincide. (8.) Greatest rainfall immediately preceded greatest prevalence of malaria, but the correspondence was not exact. Mr. Firth attributes the effect of rain upon the generation of malaria

to its promotion of chemical processes in the soil. (9.) Nothing of importance was deduced from ozonometric observations. A separate paper on the subject is promised.

In his investigations of soil-emanations, Mr. Firth anticipated Mr. Aitken's observations, recently published in *Nature*, on the formation of dew by the condensation of vapour rising from the earth. As moisture is thus proved to emanate from the soil, "it requires little imagination to understand how deleterious products of the soil are equally evolved into the atmosphere." No microbes were detected in the exuded moisture.

Our brief notice gives a very imperfect idea of the value of Mr. Firth's buried paper. We conclude it with an extract from his *General Conclusions*:—

"The somewhat opposite physical characters of soils producing an identical effect has long been a puzzle to observers. . . . Malarious soils may be practically divided into two main kinds—the very dry and barren soils, usually sandy, and the very damp, with luxuriant vegetation, partaking more or less of the nature of a swamp. Organic matter is common to them both, and in each case is found to be considerably in excess of the requirements of the vegetation found on the soil. In estimating the value of the organic matter of a soil, consideration must be paid to what plant and tree life is present in that soil. In the case of the soil specially under consideration, that of Mecan Meer, allusion has already been made to the fact that what organic matter is present is not turned to the account and purpose which nature primarily intended it to be—viz., the source of plant life by virtue of its nitrogenous properties. No one who has seen the luxuriant vegetation of a tropical or even temperate low-land can fail to realise the vast amount of organic matter which accumulates upon, and, decomposing, sinks into the soil in a vicious cycle of seasons as the result of each new year's vegetable growth. The organic matter found in such places is much in excess of even the very free plant-life usually found there. Heat and moisture alone are innocuous, but serve as the agents to predispose and start that evil product of the soil, the manifestation of whose presence we find in the paroxysmal fevers. Few doubt that this occult miasma is the cause and exciting agent of malarial fevers. That these fevers can be accounted for by Oldham's *chill* theory, and the predisposition to chill, consequent on extreme daily variation in temperature, is combated by the evidence given."

Surgeon-Major G. E. Dobson, F.R.S., reports a case of enteric fever in which the temperature rose to 110·2° five days before death, reduced 5° in $3\frac{1}{2}$ hours by two ten-grain doses of quinine.

An epidemic of cerebro-spinal fever, occurring at Devonport in 1885–6, is reported on by Surgeons Stevenson, M.B., and E. F. Smith. Thirteen cases were treated out of a strength of 2,400 men, the civil population being unaffected. The mortality was 69 per cent. No cause of the outbreak could be suggested. Mr. Lyle contributes "some remarks" on Beri-beri; but one of the first of them being the astounding assertion that the disease "does not appear to have been recognised or described previous to the year 1877, when it first appeared during the monsoon of that year in the districts around Calcutta," we smiled and read no more. This "remark" was sufficient evidence of the writer's knowledge of the subject. Dr. M. R. Ryan's paper on the effects of high temperature of the body is a useful systematic summary of medical knowledge, physiological and therapeutical, on insolation. Brigade-Surgeon Clarke's, on the outbreak of diphtheria which occurred in the neighbourhood of Sandhurst, in October and November, 1886, is remarkable for the result of the careful inquiry into the cause of the epidemic. It was found that "without exception every house and even cottage where diphtheria had occurred had obtained their milk from one dairy farm." It was concluded that the outbreak was due to milk alone, poisoned by sewage-polluted well-water. Mr. Boulger reports on an epidemic of small-pox amongst British troops in Cairo in 1885. Some of his observations are important in connection with vaccination and re-vaccination. There were 50 cases. None of these were without marks of vaccination, "and in only a few cases was re-vaccination ascertained not to have been performed on enlistment." Twenty-one, all the mild cases, had good scars. The 12 severe cases "had for the most part but very indifferent marks." The 4 fatal cases had marks, but they were faint. They had all been re-vaccinated on enlistment, "two being failures and two modified."

We conclude with an appeal to the Director-General. Some, at least, of these Appendicular reports are valuable; all are supposed by him to be so. Is it necessary to prevent their publication, as soon as they have been prepared, in the medical journals? Is any useful object gained by keeping them bottled up for eighteen months and then drawing the corks in an obscure corner, where not one in a thousand of the profession can taste, or even smell, the liquor?

The Principles and Practice of School Hygiene. By ALFRED CARPENTER, M.D., Lond.; C.S.S., Camb.; M.R.C.P. Illustrated. London: Joseph Hughes. 1887. Pp. 368.

ALTHOUGH this Handbook is primarily intended for masters of public schools, it deals so fully with the hygienic care of the young that all engaged in the education or rearing of boys or girls may read it with the certainty of gaining useful information.

Dr. Carpenter's long experience as a practical sanitarian renders him peculiarly fitted to write such a volume, and he has done it with great care. Nothing could be better than Part I., which contains twelve chapters dealing with site, building, drainage, baths, exercise, school furniture, ventilation, warming, lighting, and other subjects which properly come under the heading of School Hygiene as apart from School Surgery and Medicine.

Part II., which contains twenty chapters devoted to School Surgery and Medicine, is less satisfactory, being more suited to senior students and young practitioners than to the class addressed by Dr. Carpenter. The description of injuries and diseases, and the directions for treatment, are much fuller than could possibly be required for enabling a master of a school to render "first aid" in the absence of a medical man. Indeed, Dr. Carpenter goes so far as to introduce chemical notation into the marginal notes.

The book is clearly printed, and has well chosen marginal subheadings and a full index.

On Fevers: their History, Ætiology, Diagnosis, Prognosis and Treatment. By ALEXANDER COLLIE, M.D., Aberd. With coloured Plates. London: H. K. Lewis. 1887. Pp. 288.

THIS is the fourth volume of Lewis's "Practical Series," the works in which are written as far as possible by specialists in each subject, and are intended to be of a thoroughly practical character. Considering the scope of the Series, the author of the present volume has done his work fairly well; but he has erred in relying too much on his own practice, forgetting that even the largest experience is small compared with the field of disease, and that, to help his readers to cope with outbreaks of fever at various times and in various places, he ought to have drawn his materials from as many sources as possible. An example of the evil of this is shown in the author's statement that diarrhœa exists in but a small number

of cases of enteric fever. There is also in many places a somewhat unseemly style. For instance, in speaking of "ambulant enteric fever," and the importance of confining to their rooms all cases until recovery be complete, the author writes—"From neglect of this precaution some may be said to have walked into their graves." Again, having described the signs of approaching dissolution, the author says they "clearly indicate the fate which the '*vis medicatrix naturæ*' is providing for the victim."

In treating of the utility of tracheotomy in diphtheria, Dr. Collie says—"The writer's success in tracheotomy has hitherto been a minus quantity." This is, probably, only an example of looseness of style, as, judging by the context, the author can hardly mean that his operations increased his mortality.

The coloured illustrations in the book are by no means as highly finished, or as true to nature, as was to be desired.

Manual for the Physiological Laboratory. By Vincent Dormer Harris, M.D., F.R.C.P.; and D'Arcy Power, M.B., F.R.C.S. Fourth Edition. Illustrated. London: Baillière, Tindall, & Cox. 1888. Pp. 268.

In the present edition this well-known handbook is in many ways improved. The same general arrangement is adhered to, the book being divided into three parts, dealing respectively with Practical Histology, Physiological Chemistry, and Practical Physiology; but the second part has been greatly enlarged, and new matter has been added to the other two parts.

The third part is the least satisfactory, the arrangement is haphazard, and the descriptions and directions are incomplete.

Chapter I. is headed "Examination of the Circulation Microscopically;" but, after dealing with its subject-matter, it goes on to describe the sphygmograph, the method of estimating the blood-pressure in a rabbit, the stethoscope, ophthalmoscope, and laryngoscope. Chapter II. deals with Contractility of Muscle. Chapter III. is on the Physiology of the Frog's Heart. Chapter IV. (a page and a third long) deals with the Nervous System. A thorough revision of Part III. would greatly enhance the value of the book.

The Appendix contains some useful notes on the preservation of Museum Specimens. There is a fairly copious Index, but no Table of Contents.

Rupture of the Perinæum. By M. J. Molony, L.R.C.P., &c. Dublin: Fannin & Co. 1886. 8vo. Pp. 63.

The subject chosen by Mr. Molony is undoubtedly of great practical importance, not only from the frequency of the accident and the misery which it directly entails, but also, as he points out, from the number of other complaints to which it may indirectly give rise; though in this direction we think he goes rather too far when he includes such affections as parametritis and uterine fibroids. All will agree with him that prevention is much more important than cure, but we very much doubt "that the time is not far distant when the various procedures devised for the remedy of lacerated perinæum will have passed into the great storehouse of bygone surgery." We also disagree with him as to the frequency of narrowing of the pubic arch, which is a rare deformity, and not very common, as he states; and we further think that fifty cases was a very excessive number in which to have resorted to manipulation of the head because of this supposed deformity. We should also advise him to give a further trial to what is known in Germany as Ritgen's method, which he rejects as "a veritable coruscation of obstetric gymnastics," and states that it was "described in the *New York Medical Record* in June, 1885, by the Vienna correspondent of that Journal." Ritgen, however, states that he found a complete description of it in a treatise on Midwifery by Sir Fielding Ould, published in 1742. When Mr. Molony informs us that the plan of digital dilatation has yet to undergo the test of general practice, we sincerely hope that he is mistaken.

An Abstract of Lectures on Lepra. By J. L. Bidenkap, Physician to the Department for Skin Diseases at the Rigs-Hospital, Christiania. 1886. Pp. 71.

Dr. Bidenkap is well known as an authority upon leprosy, and in this pamphlet he presents us with a succinct epitome of the present state of knowledge regarding this terrible malady. He has little encouragement to offer in the way of treatment; but, as a local application, thinks he has had the best results from chrysarobin, or goa-powder, applied in combination with an adhesive plaster (*not* lead plaster). Five coloured plates accompany the text, illustrating the external appearances and histological characters of the disease.

PART III.

HALF-YEARLY REPORTS.

REPORT ON OPHTHALMIC SURGERY.

By Arthur H. Benson, M.A., F.R.C.S.I.; Ophthalmic and Aural Surgeon to the City of Dublin Hospital; Assistant-Surgeon to St. Mark's Ophthalmic Hospital; Examiner in Ophthalmic Surgery to the Royal College of Surgeons.

ACTION OF DRUGS.

A series of lectures on the Intra-Ocular Muscles of Mammals and Birds has been delivered at the Royal College of Surgeons, England, by Mr. Walter H. Jessop (*Oph. Rev.*, Vol. VI.). The action of various myotics and mydriatics, singly and in combination, forms a feature in these lectures and deserves our attention. From a very large number of experiments he concludes that eserin acts on the intra-ocular muscles, as on the unstriped muscle of other parts, by stimulating directly the muscular fibre.

From the foregoing experiments he found that atropin acted by paralysing directly the unstriped muscular fibre; eserin by stimulating such fibre; and cocaïn by stimulating the endings of nerves relaxing the muscles.

The next experiments are on the antagonism and combined actions of these three drugs on the pupillary muscle, and will be found to corroborate the actions given above.

Atropin and Eserin.—In ordinary atropin mydriasis, the addition of eserin reduces the dilatation of the pupil, but if the *ad-maximum* atropin mydriasis be induced, eserin has no effect. The reason of this is that as long as the muscular fibre is not completely paralysed eserin can stimulate it, and produce myosis, but when complete palsy ensues eserin has no effect. If eserin and atropin be used together myosis ensues first, and is afterwards followed by dilatation of the pupil. Atropin always overcomes eserin myosis if used long enough.

Atropin and Cocaïn.—Cocaïn mydriasis is not increased by atropïn, but the pupil no longer acts to light and accommodation. Atropin mydriasis is usually increased by cocaïn, but, in rare exceptions, where the *ad-maximum* atropin dilatation has been produced, the addition of cocaïn has no effect.

Cocaïn and Eserin.—Full eserin myosis is never overcome by cocaïn. Eserin always reduces cocaïn mydriasis. The mixture of cocaïn and eserin (2 per cent. solution of each) in the proportion of twenty-six of cocaïn to one of eserin produces no change in the pupil.

Of the mydriatics belonging to the same group as atropin, viz., homatropin, daturin, duboisin, hyoscyamin, hyoscin, gelsemin, and scopolein, the physiological action is the same, and they differ simply in the intensity of their effects. The most important of them are homatropin and hyoscin.

Homatropin is the most frequently used, and its action is quicker, weaker, and less lasting than atropin.

Hyoscin is the strongest and quickest in its action, but though clinically very useful, it is dangerous in cases predisposing to glaucoma, as eserin has no effect on the mydriasis induced.

The other myotics, pilocarpin, nicotin, and muscarin, act on the unstriped muscular fibre of the intra-ocular muscles as eserin by stimulating it, and thus inducing contraction.

Pilocarpin is a much weaker drug than eserin, and the ratio of their respective strengths on the pupil may be estimated by their behaviour with cocaïn, when eserin is found to be seven times stronger than pilocarpin. Pilocarpin has no effect on the atropinised pupil.

Muscarin acts more energetically on the ciliary muscle than on the pupillary.

OPHTHALMIA NEONATORUM.

Mr. J. E. Weeks (*N. Y. Med. Rec.*) considers that ophthalmia neonatorum is one of the most productive causes of blindness. By far the majority, and all the severer forms of ophthalmia neonatorum, are due to the presence of the gonococcus. The disease is contracted during or shortly after the birth of the child. Proper prophylactic measures may prevent its occurrence. Ophthalmia neonatorum and gonorrhœal conjunctivitis in the adult are very variable in the degree of severity. Both forms of the disease may be controlled in any of their stages by proper treatment.

CATARACT EXTRACTION.

At the twenty-third annual meeting of the American Ophthalmological Society, in July, 1887, Dr. H. Knapp reported a series of one thousand cataract extractions. The results were given for each series of one or two hundred as follows (*Ophth. Rev.*, Vol. VI.):—

Hundreds	Good	Moderate	Failures due to Suppuration	Other Causes
First	70	22	3	5
Second	86	12	2	0
Third	86	9	3	2
Fourth and fifth	81	$7\frac{1}{2}$	$8\frac{1}{2}$	3
Sixth	89	1	8	2
Seventh	88	7	2	3
Eighth	90	8	1	1
Ninth and tenth	$90\frac{1}{2}$	$5\frac{1}{2}$	3	1

In the first series the section was made far back, and loss of vitreous was frequent. In the second the technique was considerably improved. In the fourth and fifth von Graefe's section was practised, and a piece of capsule excised; and great care was taken to remove all lens substance by manipulations, which he now regarded as bacteriologically bad. After this the section was shifted into the peripheric circular section of Wecker. In the ninth and tenth series the operation was done with antiseptic precautions. In two cases the other eye had been lost by sympathy. Suppuration may commence elsewhere than in the corneal section. Purulent capsulitis frequently occurred in the earlier series. He was convinced that all suppuration was connected with germ life, and paid tribute to the late Prof. Horner for his share in introducing antiseptic methods in ophthalmic surgery.

With regard to iridectomy, there were cases in which it was necessary, and others in which it was best.

GLAUCOMA.

Mr. Priestly Smith, Birmingham (*Ophth. Rev.*, Vol. VI.) writes an important article on the Shallow Anterior Chamber of Primary Glaucoma. An advance of the lens and iris towards the cornea usually accompanies the onset of high tension. Any hypothesis, therefore, which professes to explain the increase of tension, whether

by hypersecretion, or by undue retention, must explain the fact that the vitreous chamber appears to enlarge at the expense of the aqueous chamber.

In answer to the question—Why does the lens move forward when the intra-ocular pressure arises? he shows that "an advance of the lens is the natural consequence of an increase in the quantity of blood in the interior of the eye," and that "under certain predisposing conditions an advance of the lens may involve an attack of glaucoma."

The course of events may be pictured thus:—The vessels of the uveal tract are overfilled; the ciliary processes swell up; a part of the aqueous is expelled and the lens advances; the angle of the chamber is compressed. From this moment the intra-ocular pressure rises rapidly, and the obstruction at the outlet intensifies itself. The increased pressure within the eye embarrasses the escape of venous blood still further and aggravates the swelling of the processes; the engorgement increases, the lens is driven forward still more forcibly until not an atom more of the aqueous can be forced through the closed outlet; a shallow but firmly locked anterior chamber remains. The internal circulation of the eye is strangulated because the normal process of compensation by the aqueous is arrested. The external vessels dilate, and serum escapes in the directions of least resistance. This is acute glaucoma.

"The foregoing description of acute glaucoma involves a conception which, so far at least as I am concerned, is new. *The high tension depends more upon an excess of blood in the eye, than upon an excess of the intra-ocular fluid.* We see evidence of this fact in the free escape of blood which commonly accompanies an iridectomy for acute glaucoma.

"A shallow anterior chamber is less characteristic of the chronic non-congestive type of glaucoma than of the acute congestive. This of itself indicates the close connection of the symptom with vascular disturbance. I imagine that *glaucoma fulminans* is the expression of a maximal obstruction of the circulation, *glaucoma simplex* of a minimal, the conditions of the eye which predispose to the disease being similar in the two cases."

Dr. J. Jacobson gives a Contribution to the Knowledge of Glaucoma (von Graefe's *Arch. f. Ophth.*, Vol. XXXII., 3, p. 96), in which he defends von Graefe's definition of the nature of glaucoma, as consisting in an increase in the intra-ocular pressure, combined with a disturbance of function of the retina and optic

nerve (excavation and amblyopia); and concludes that primary simple glaucoma is the result of a gradually diminished velocity in the chorioidal circulation, combined with the secretion of a liquid of the same optical value into the vitreous, thus causing the increase in pressure.

Dr. J. S. Prout and Dr. D. Webster (*Trans. Amer. Ophth. Soc.*, 1886) have performed Badal's operation—*i.e.*, laceration of the infratrochlear nerve for the relief of glaucoma. They think the operation deserving of trial, especially in cases unfit for operation on the eyeball. It cannot make matters worse as to the eyes, and the relief from pain, even if temporary, is worth procuring at the cost of so slight an operation. In Webster's case the operation seems to have done positive and permanent good.

ALBUMINURIC RETINITIS.

Duke Carl Theodor of Bavaria has published a Contribution to the Pathological Anatomy of the Eye in Kidney Diseases. He found that the principal typical condition in the early stages is an inflammatory process more or less marked in all the blood-vessels of the eye. The main changes are therefore found in the chorioid, as the products of inflammation are observable, not only in the stratum of the blood-vessels, but also diffusely spread through the membrane itself, while the degenerative changes are principally localised in the papilla and retina. The predilection of the disease for these two membranes may be due (1) to the existence of a closed system of capillaries in the chorioid, and (2) to the fact that the retinal blood-vessels are in a certain sense terminal arteries. The author comes to the conclusion that the arteriitic process begins in the outer layer of blood-vessels (*Arch. of Ophth.*, Vol. XVI.).

Dr. C. S. Bull, in *Amer. Ophth. Soc. Trans.*, 1886, gives an analysis of 103 cases of exudative neuro-retinitis associated with chronic Bright's disease.

In 56 cases of Bull (575) the duration of the renal disease was unknown. In 47 it was varied from 6 months to several years. The two sexes were affected about equally. The ages varied from 5 to 78 years. V ranged from $\frac{20}{20}$ to zero. In all both eyes were affected sooner or later. The retina alone was affected in 80 cases, both optic nerve and retina in 25 per cent. of the cases. Hæmorrhage in both eyes was noted in 46 cases, in the right eye alone in 11; in the left alone in 12; in 34 there were none. There was hypertrophy of the left side of the heart without valvular disease in

79 cases; with valvular disease, 16. Cardiac disease developed while the patient was under observation in 5 cases. Of the 86 who died, 57 died in the first year; 18 within the second; 6 within the third; 4 within the fourth, and 1 within the sixth.

Eales has reported a case supposed to be one of severe albuminuric retinitis in one eye only (*Trans. Ophth. Soc. U. K.*, Vol. V., p. 126).

OCULAR SYMPTOMS IN EPILEPSY.

Dr. Schleich (*Zeh. klin. Monatsbl.*, Vol. XXIV., p. 469), in an article on "The Eyes of the Epileptics at the Institute Schloss Stetten, in Wurtemberg," gives the results of the examination of 127 epileptics. He found that there were no marked changes in the fundus, the absence of optic neuritis, choked disc, and well-defined atrophy being especially noticeable, whilst slight deviations from the normal were of frequent occurrence. The absence of congenital anomalies was also noteworthy, as well as the frequent occurrence of hypermetropia and strabismus, and the absence of paralysis of the muscles.

Dr. Charles Oliver (*Philadelphia Med. Times*, Feb. 5th, 1887) gives "An Analysis of the Ocular Symptoms obtainable in Epilepsy in the Male Adult." The clinical material for these observations was obtained at the State Hospital for the Insane at Norristown, Pennsylvania. Fifty cases were examined. His observations and conclusions are as follows:—

1. Direct vision for form, as a rule, normal in both emmetropia and corrected ametropia.
2. Accommodative action normal in due proportion to age and refractive error.
3. Visual fields for form and colour reduced to one-third to one-twentieth of normal areas.
4. Visual fields for form and colour regularly diminished, without any indentations or scotomata.
5. Order of colour-fields follows the regular physiological sequence, without transposition or reversion.
6. Subnormal colour-perception to a slight extent, as evidenced by faulty selection of delicate tints and shades containing low percentages of green and red.
7. Pupils, as a rule, equal in size and alike in shape.
8. Irides freely and equally mobile to light-stimulus, accommodation, and convergence.

9. Extra-ocular motion intact in all directions. The presence of insufficiency of the interni in the majority of cases is readily explained by association with existing H+Ah, and probably has no relation to the epileptic condition.

10. Optic disk superficially over-capillary, with a decided grayness in its deeper layers, showing a low grade of incipient optic-nerve degeneration.

11. Scleral ring rather more sharply cut and broader, especially to the temporal side of the disk, than in the healthy eye; this being probably due to a slight shrinkage of lowered nerve-tissue.

12. Fibre-layer of retina increased in thickness, as evidenced by dense and coarse massings of striation extending in all directions from the disk, these being more particularly marked in the superior and inferior portions of the eye-ground, even hiding the edges of the disk itself in many instances.

13. Retinal vessels large in size and carrying rather dark-coloured blood, this being more pronounced than usual with the veins.

14. Retinal veins exceedingly tortuous, and in a few instances pulsating.

15. Retinal arteries frequently wavy and sometimes tortuous, especally the temporal and macular twigs.

16. Retinal lymph-channels visible in the majority of cases, particularly seen along the larger vascular distributions and at the vessel-entrance as glistening and yellowish-white opacities.

17. No other visible changes of any significance throughout the eye-ground except a granular condition of the chorioid in the macular region.

As was to be expected among this class of patients, many of the subjective signs were negative; but, withal, sufficient data have been produced to warrant proper conclusions in this direction. The results obtained from the study made of the visible ocular changes are of special value, and may be cited as of sufficient importance to be useful in diagnosis.

The peculiarities of the eye-ground seen in the cases he has studied—those of long-standing attacks of frequent occurrence—are most probably explained by the presumption that every convulsive discharge leaves an additional pathological condition, by which the objective appearances of a low and chronic form of retinitis and perivasculitis, associated with dirty red-grey degeneration of the optic nerve, are at last established as the visible living results of a similar process which has been taking place within the intra-

cranial substance, and which may be readily seen *post mortem* by careful microscopic examination.

ON THE UNEQUAL WIDTH OF THE PUPIL IN INTERNAL DISEASES.

Dr. F. Pasternatzky, from observations made at the clinic for diagnosis and general therapeutics of Prof. Ischndnowsky (*Arch. Ophth.*, Vol. XVI., No. 3), gives the following:—He generally found unequal width of the pupils in those constitutional diseases in which there is a distinct anatomical lesion, generally on one side only (croupous pneumonia, pleuritis, renal colic, affections of the heart and liver). The various diseases may be ranged as follows, as regards the frequency of occurrence of this symptom:—

In croupous pneumonia, inequality of the pupils occurs in - - -	85	per cent.	of all cases.
In heart-disease and aneurysm of the aorta	61	,,	,,
In pleurisy - - - -	52	,,	,,
In catarrhal chronic pneumonia - -	38	,,	,,
In acute rheumatism of the joints -	25	,,	,,
In catarrh of the respiratory passages -	25	,,	,,
In scurvy - - - -	16	,,	,,
In typhus fever - - - -	16	,,	,,
In febris recurrens - - -	15	,,	,,
In typhoid fever - - -	13	,,	,,

In croupous pneumonia the pupil of the affected side is larger in the beginning of the process; the maximum of dilatation is reached at the height of the disease. Shortly before the crisis, and during the latter, the pupils become equally wide, while during convalescence the pupil of the affected side becomes smaller. The author believes that the inequality of the pupils in internal disease is a reflex phenomenon in close connection with the process of disease, the nature of which has not yet been determined.

CHANGES OF THE FIELD OF VISION IN MENSTRUATION.

Dr. L. O. Finkelstein (*O. R.*, Vol. VI., p. 323) has studied the functional activity of the eye during menstruation in twenty healthy women, aged from nineteen to thirty-three. From this group of observations the following deductions may be drawn:—1. During the menstrual period there takes place a concentric narrowing of the field of vision. 2. The phenomenon makes its appearance one, two, or three days before the beginning of the hæmorrhage, reaches

its greatest intensity on the third or fourth day of menstruation, and then gradually disappears about the seventh or eigthth day of the period. 3. The narrowing varies in degree in individual cases. In general, it is more pronounced in those women whose menstruation is associated with malaise, headache, cardiac palpitation, and other nervous symptoms, as well as in those who lose large quantities of blood. 4. Not only the field of vision for white, but also the visual fields for green, red, yellow, and blue, undergo a regular diminution. 5. Perversion of perception of green (which is then seen yellow) is observed fairly often (in twenty per cent.), the phenomenon disappearing simultaneously with the contraction of the fields. 6. The central vision becomes impaired but slightly, to rapidly return to the standard after the catamenia. 7. Refraction remains intact.

A NEW ANTISEPTIC.

Professor Cazeneuve has, by passing a stream of chlorine through an alcoholic solution of green camphor, produced a new compound, camphor chloride, having a peculiar smell, and occurring in white crystalline masses. Its internal use produces convulsive effects, resembling those of strychnin, causing also a slowing of the pulse. Externally applied, it acts as an antiseptic, equal in power to iodoform without possessing its unpleasant smell. On the microbe of osteomyelitis, the virus of gangrene, of charbon, and on bone abscesses of tuberculous origin, its effects are most marked and valuable. Applied to fresh wounds it rarely causes pain, but pain follows its application to inflamed wounds. For indolent ulcers it forms a useful dressing.—*St. Louis Medical and Surgical Journal.*

LIGATURE OF THE VERTEBRAL ARTERY.

Dr. Christian Stenyer, of Chicago, records a case of successful ligature of the vertebral artery, where it winds round the atlas, for traumatic aneurysm. The artery was unusually large, "nearly as large as the internal carotid," and the loss of blood was so great as to necessitate whiskey injections and the transfusion of blood to the extent of eight ounces. The author states that: "The case is the first in which vertebral artery ligation has been successfully performed between the occiput and axis, and the fifth in which vertebral artery ligation for a wound involving a traumatic aneurysm of the vertebral artery has resulted in recovery."—*Medical Standard*, March, 1887.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—Robert M'Donnell, M.D., F.R.S.
General Secretary—W. Thomson, M.D.

SURGICAL SECTION.

President—A. H. Corley, M.D., President of the Royal College of Surgeons in Ireland.
Sectional Secretary—Mr. W. Thornley Stoker.

Friday, November 11, 1887.

The President in the Chair.

The President's Address.

The President delivered an Inaugural Address, outlining the history of surgery for the past fifty years.

Trephining in Brain Disease.

Mr. J. Dallas Pratt read a paper on a case of mastoid disease with discharge of pus from the middle ear, in which he had successfully trephined. [It will be found in the Number of this Journal for December, 1887, Vol. LXXXIV., page 467.]

Serious Brain Symptoms following Pyæmia.

Mr. Mayne, of Longford, read a paper on serious brain symptoms following pyæmia:—A. B., aged twenty-seven, who had slight scratch on her finger, had been dressing a wound. A few days after finger got sore; glands in axilla became enlarged and inflamed. These symptoms passed off, but after some days the throat got sore and abscess formed in tonsil, which was opened, when a quantity of pus escaped. Soon after this the parotid

gland inflamed, suppurated, and burst into external ear, through which pus freely escaped. After sitting at open window in a draught, paralysis of left side of face set in, which was cured by counter-irritation and galvanism. She complained, after some days, of severe pain in right side of head, and was very irritable. Gave anodynes, which had very little effect in relieving pain or procuring sleep. Vision of right eye became impaired, and complained of tears flowing into right eye, preventing her seeing; pupil contracted. After a drive in a very easy carriage, she became more irritable, and could not sleep. Had a severe rigor, and declared she could not bear the pain of right side of her head. Paralysis of right side of face; tingling of left arm, and dragged left leg; right pupil dilated; misapplied words. For some days the symptoms became more marked. Mr. Fitzgibbon trephined left mastoid, but on removal of bone there was no sign of pus. For several days all bad symptoms appeared aggravated; paralysis well marked; sphincters were paralysed. After some days paralysis passed away, but was succeeded by noisy delirium, which continued for several weeks. Counter-irritants were applied to head. Tonics, iodide of potassium, and iron, with cod-liver oil, were given internally. Eventually health was restored, and the mind became normal. I was unfavourable to the trephining of the mastoid, although the patient had had in early life otorrhœa after scarlatina, but the discharge had not been present for years, and as during that time she had not been troubled with any brain symptoms, I saw no grounds for believing that trephining the left mastoid would benefit the case. All the symptoms pointed to brain trouble on the right side, probably about the fissure of Rolando. Had there been any evidence of mastoid trouble, such as Mr. Wheeler records in Vol. I., p. 61, of the Academy's Transactions, I would not have been so opposed to the operation.

Mr. Henry Fitzgibbon regretted the want of notice of Mr. Mayne's paper or he would have consulted his notes of the case, as it was the subject of a paper which he himself read before the Academy last Session; but speaking from memory as to the condition of the patient at the time of the operation, he was satisfied the disease had originated from inflammatory action extending from the left mastoid region. It seemed to him that the lady had had otorrhœa more recently than Mr. Mayne mentioned. At any rate, her state appeared to Mr. Wheeler and himself to be perfectly hopeless, except, as the only chance of recovery, by giving relief to some pent-up intracranial matter. While admitting that trephining the mastoid process was not unequivocally indicated, all he proposed to do was to trephine where he thought trephining would give relief. Although immediately after the operation her condition became worse, yet within four days he saw matter welling up between the bone and the dura mater. Consequent on the discharge from the wound having ceased, and the patient becoming worse, he went down again,

and having scraped away granulations, a fresh gush of matter came from between the dura mater and the bone, with the result that the patient got relief and ultimately recovered.

Mr. Bennett submitted that diagnosis should be carried forward to a greater degree of certainty than was at present attained before adopting Mr. Pratt's rule, that the trephine should be applied in almost all cases of otorrhœa where the discharge was maintained a considerable time and did not yield to other means. There were undoubtedly certain cases that could and should be relieved by trephining, but surgeons familiar with the diseases of the inner ear, and the petrous bone connected with it, knew that, while there were many agencies of inflammatory action, abscess was a rare form of complication. Moreover, there was the risk of perforation into the great lateral sinus, the formation of a thrombus, and the setting up of pyæmic action, with death by pyæmia, supervening on otorrhœa. The cases that could be relieved were those of intracranial suppuration, but these occurred much more rarely than the implication of the sinuses. He had investigated two or three cases in which the path of fatal inflammation proved to be along the auditory nerve to the base of the brain.

Mr. Myles produced a skull upon which he had marked the points Mr. Wheeler had laid down for trephining the mastoid, with the result that the trephine must hit the anterior edge of the lateral sinus, and if the pus were located, not in the mastoid cells, but in the inner ear, it was beyond the bounds of anatomical possibility that the trephine could reach it. He failed to see why the operation was performed in the case detailed by Mr. Mayne at all. The only indication warranting the operation would be cerebral pressure or the development of intracranial suppuration. In Mr. Mayne's case the pus was said to be between the dura mater and the bone, and he failed to see how trephining as indicated would get it out.

Mr. Benson observed that, as regards Mr. Pratt's treatment by injections, all aural specialists had given up the use of injections or washes in chronic otorrhœa, and the dry method was almost entirely adopted—namely, insufflation or the use of dry powders.

Mr. Thomson said Mr. Mayne's case raised some interesting points, as being one of pyæmia. The lady, from Mr. Mayne's version, seemed to be suffering from left hemiplegia, and the trephining took place on the left mastoid process, or in that region. He wished to know from Mr. Wheeler, who consented to the operation, why, having regard to the localisation of functions, that particular position was selected; and whether he considered that the removal of a piece of bone from the left mastoid region was calculated to improve hemiplegia occurring on the same side? It appeared from Mr. Henry Fitzgibbon's statement that no pus appeared until the fourth day, when it was manifest. There was nothing

remarkable in that. If a piece of bone was removed and the case allowed to go on for four days, unless the wound was strictly aseptic, it was not an unlikely condition that there should be pus. The symptoms produced by pressure were explained by the pus pent up in the wound for a certain time.

Mr. Wheeler said:—Like Dr. Fitzgibbon, I must express my regret that Mr. Mayne, of Longford, did not consider it desirable to acquaint Dr. Fitzgibbon that he intended bringing forward his (Mr. Mayne's) views of a case operated on sixteen months ago, by Dr. Fitzgibbon, and which case had been recorded by Dr. Fitzgibbon at one of the Academy meetings in the early months of this year, especially if his object was, as he stated, to elicit discussion. It is very difficult after sixteen months to recall in a moment the particular condition of any individual case; but this I do remember, that I examined the patient's left ear with the assistance of electric light, and that there was an aperture in the upper part of her membrana tympani, and that within a very short time there had been a discharge from this ear which suddenly ceased, and that after this the serious symptoms supervened. The lady had facial paralysis on the right side, which he believed was caused by the irritation of the centre of the seventh nerve, carried from the left side, as the centres of both nerves lie close together. She had loss of power of her lower limbs. I saw the patient only twice—the night she was in imminent danger, when I recommended the operation, and to which Mr. Mayne in consultation consented; the second occasion being some months after, when the lady had perfectly recovered. As I said before, it was difficult at a moment's notice to recall every feature of a case operated on sixteen months previously. I wish to congratulate Dr. Pratt on the case that he has just recorded, and so successfully treated, and also to thank him for the opportunity he gave me of being present at the operation. There was one point of special interest which Dr. Pratt mentioned—that was the hæmorrhage during the operation, and this, I believe, either proceeded from the veins known as the veins of Santorini, or might be from the sinus jugularis spurius, described by Luschka. Hæmorrhage from these sources was always amenable to pressure. I quite concur in the remark that the trephine should not be used indiscriminately for the cure of otorrhœa. There are cases which can be satisfactorily treated by other means. But I consider that, in cases of prolonged discharge, passing through an opening in the membrane, the operation is called for; as also in cases associated with bone disease, and in cases where cerebral symptoms supervene from continued or suppressed discharge. There is no axiom more true than that spoken by the late Sir William Wilde, "that as long as a discharge from the ear is present we can never know how, when, or where it may terminate, or to what it may lead." It is quite established that otorrhœa often leads to fatal results

without any caries of the bone existing, which fact has been proved by *post mortem* examinations, and can be explained only by considering the anatomical relations, for the membrane lining the meatus and the tympanum is in the same relation to the temporal bone as the pericranium to the cranial bones; and in the vessels of the temporal bone, and its cellular spaces, a connection exists between the soft portions of the ear and the dura mater and its venous sinuses; and in these sinuses, and the small venous vessels connected with them, which ramify in the spaces of the cranial bones, the conditions for forming blood clots are most favourable, and in the bony spaces which encircle the tympanum there may be purulent masses commencing to decompose. Taking into consideration the comparative frequency with which a slight suppuration from the ear, and even after a lengthened time, may be followed by sudden death, it seems justifiable to resort to a method certain to cure the otorrhœa and anticipate fatal results. In cases where the bone is diseased I have no hesitation in operating at once, as, in addition to all the other morbid conditions, ulceration of the large vessels may occur, and no treatment will cure it but bone drainage. It is not always easy to discover the existence of carious bone; the character of the pain, which is unusually severe, may be an indication, and its sudden appearance and frequent recurrence after purulent secretion. The unpleasantness of the odour is no assistance; for, should the secretion possess materials for forming fatty acids, the odour will be almost unbearable, and the most unpleasant smell of all is in the discharge from the external meatus, where sebum and cerumen will be found. The probe is a dangerous instrument, and even in experienced hands may inflict injury; for the labyrinth wall is very thin just where the explorer will place the probe, and very slight cause may injure the cochlea or vestibule. Examining the discharge by the microscope and illumination will probably be the safest way to determine whether the bone is diseased or not. When cerebral symptoms are present there can be no hesitation about operating. I have four times tapped the temporo-sphenoidal lobe successfully. On one occasion no abscess was found, although the symptoms all pointed to such. With respect to the observations of Mr. Myles, had a person less ardent in his work made similar remarks I think I would not notice them, as I am quite satisfied with the favourable reviews accorded to me by the Americans and Scotch. Here, Mr. President, I show you a skull containing the brain; I performed my operation of trephining on each side. On one side I have pierced the sphenoidal lobe with a probe; on both sides you can observe the tympanum and mastoid cells are open. I then cut the head off of the subject, and made a vertical section through the skull and brain. I have removed on one side the cerebellum, to show the lateral sinus intact. I shall be happy to demonstrate this to Mr. Myles after the meeting, and I feel certain that, when he has looked at this preparation, he will

perform the operation I advocate whenever expedient. and feel no dread of wounding the lateral sinus.

Mr. Franks said the impression left by Mr. Henry Fitzgibbon's paper was, that Mr. Mayne's case was probably a pyæmic one, and there was no reason why the patient should be trephined on the left any more than on the right. When the bone was removed no pus welled up, but a certain amount of hæmorrhage which he stopped by pressing lint into the wound. Hence it was not aseptic, and in three or four days there was naturally plenty of pus, which had been generated by the lint or some microbe. Trephining in otorrhœa, unless there were well-marked intracranial symptoms, was unsurgical. The surgical procedure was to trephine the mastoid process, and the operator should know, instead of making a chance shot, whether the mischief was inside or outside the cranial cavity; outside it, the cranial cavity should not be opened; if inside, the cavity should be opened in the least dangerous position. He entered a protest against wholesale trephining of the mastoid process. Mr. Myles had called attention to a skull upon which he showed that following Mr. Wheeler's method would open the lateral sinus. He, too, had another skull himself, which would show that operating in the same place the trephine would go into the middle of the lateral sinus.

Mr. Pratt, in reply, said he would undertake to trephine by Mr. Wheeler's method the skulls referred to by Mr. Myles and Dr. Franks, without going into the lateral sinus at all. It should be remembered that the lateral sinus was not opened in any of the cases in which that method was adopted. The treatment was iodoform and boracic acid; injections of perchloride of mercury and boracic acid. He disagreed as to the desirability of waiting for intracranial symptoms, believing that by so waiting nine-tenths of the cases would die. No insurance company would grant a policy where there was otorrhœa, and hence the disease was looked upon as more serious than Dr. Franks thought. He did not regard abscess of the ear as a rare complication.

Mr. Mayne also replied.—He regretted that Mr. Wheeler and Dr. Fitzgibbon did not know he was going to read his paper, the title of which he had forwarded to the Secretary; but similarly he had received no intimation in reference to Dr. Fitzgibbon's intention to read a paper on the same case, and he would not have known it was his case had it not been that his name was mentioned in the report published in the *Medical Press and Circular*. His reason for bringing forward the paper was to elicit why, with the symptoms showing pressure on the right side of the brain, the left was trephined. He consented to the operation, no doubt, believing the girl to be dying at the time, and Dr. Fitzgibbon and Mr. Wheeler suggested that it was right to give her a chance. He suggested—why not trephine on the right side where the symptoms were indicated? The matter was laid before the lady's friends, and they

said, by all means perform any operation deemed necessary. On the faith of Mr. Wheeler's and Dr. Fitzgibbon's opinion he could not then withhold his concurrence.

The Section adjourned.

MEDICAL SECTION.

President—James Little, M.D.; President of the King and Queen's College of Physicians.

Sectional Secretary—A. N. Montgomery, M.K.Q.C.P.

Friday, Nov. 18, 1887.

The President in the Chair.

A Case of Lymphadenoma.

Dr. W. M. A. Wright read some notes on a case of lymphadenoma occurring in a girl aged twelve and a half years, whose family history was good save that her father died in middle age from hæmorrhage caused by some chronic and very painful affection of the leg. The child was quite well until March, 1887, when her cervical glands enlarged, and she got a cough and began to look very ill. The author saw her on April 26th, and found her suffering from diarrhœa, her temperature 103° and her pulse 110. She was very anæmic, but had a bright malar flush; her anterior cervical glands were very much enlarged, nodulated, and hard; her post-cervical, axillary, and inguinal glands were enlarged. She spoke only in a whisper. She was excessively drowsy, and the skin over her abdomen was very dry and rough. No examination of the blood was made.

On May 11th the pyæmia was unabated, and some pigmentary staining was perceptible in the sides of the neck, on the anterior fold of the axilla, and on the front of the abdomen over Poupart's ligament.

By May 20th the staining had extended in the neck, in the thorax, and over the whole front of the abdomen, being a dark-brown over the clavicles, on the axillary folds, and in the lower part of the abdomen; lighter elsewhere. No sign of bronzing in face, forearms, hands or feet, nor on the mucous membrane of the mouth. The pigmentation deepened in colour for six weeks, and then remained stationary until death, which occurred on August 16th.

After some remarks on the various points of interest in the case, Dr. Wright stated that he found no remedy of any use, though he had twice given arsenic until marked constitutional symptoms were produced.

Dr. Graves said he saw Dr. Wright's case, and the glands, though hard, had a feeling of elasticity, as distinguished from the dull feeling of the ordinary strumous glands. The tonsils were slightly enlarged.

Dr. A. W. Foot observed that, while Dr. Wright's case appeared to have been very complicated, it was unusual to find ordinary lymphadenoma pyrexial, unless complicated with tubercular disease. He asked, however, as a clinical observation, whether Dr. Wright could distinguish with his fingers the separation of the glands. In benign cases the separation was perceptible and the glands shelled out, whereas in lymphosarcoma, which was essentially malignant, the glands were fused, capsules and all, and could not be separated. The length of the disease and the continuous character of the fever suggested the inquiry whether there was any suspicion of enteric complication more than the ordinary mesenteric implication.

Dr. Nixon said that the chief interest in Dr. Wright's case centred in the pigmentation corresponding to what was found in Addison's disease; and this was explicable in two ways—either in the course of the disease the cortical portion of the kidney was implicated, with subsequent extension to the medullary portion, or there arose from the intestinal irritation present, an ascending neuritis which implicated the solar plexus, and in that way gave rise to the signs of Addison's disease. It was simply an implication of that portion represented by the medullary part of the suprarenal capsule. He believed that pyrexia was present in lymhadenoma.

Dr. Finny concurred with Dr. Nixon that fever seemed to be one of the incidents of lymphadenoma. In 1882 he had under treatment in Sir Patrick Dun's hospital a case in which, for nine weeks, fever was more or less present, and a fresh elevation of fever was noticed with the extension of the disease in each gland. Dr. Wright's patient seemed to be suffering more from debility than anything else. In his own case the great loss of voice was not present. He regarded the bronzing of the skin in Dr. Wright's case as a feature of great interest. In a recent case of discoloration of the skin and glandular enlargement which he saw, with the disappearance of the glandular enlargement the discoloration disappeared also. But in the absence of a *post-mortem* examination it was impossible to do more than theorise as to the cause of the discoloration. Certain discolorations occurred in pregnancy, and they might also occur under other conditions, of which about as little or as much was known.

Dr. Walter Smith said there was a chaotic state of confusion in the professional mind as regards lymphatic diseases; but clinically the only way to distinguish between leucocythæmia and lymphadenoma consisted in a microscopical examination of the blood. The difficulty still existed as to why certain groups of the lymphatic glands remained enlarged for years, why another case exhibited a generalised outbreak of lymphatic tumours, or a third symptoms of malignant cachexia. On the whole,

taking a practical view, the powerlessness of therapeutics must be acknowledged.

Mr. Broomfield suggested that the suprarenal capsules had something to do with the metamorphoses of the blood, recalling a theory of Dr. Charles M'Munn, formerly of Dublin, as to the agency of hæmoglobin and hæmatin.

Dr. Wright, in reply, said the upper glands of the neck from ear to ear were not separable; though they felt as if they could be easily isolated, on deeper pressure they were fused together. However, in the lower part they were perfectly distinct. At first he thought the case was one of enteric fever. The spleen was very slightly enlarged, but the stools were not typical, and there were no other symptoms. As to pyrexia, Bristowe and Eustace Smith recorded that most of the cases died from exhaustion caused by pyrexia. In reference to the bronzing of the skin, in the absence of *post-mortem* verification, he could only guess at the cause, and he was inclined to agree with Dr. Nixon's idea that there was some engorgement of the lymphatic elements in the suprarenal capsule, and secondly, extension of the disease to the cortical portion.

The Fever of Over-exertion.

Dr. Knott described at some length the train of febrile symptoms which he had seen in some cases to follow severe prolonged exertion, especially in the labouring classes, who were in bad training for much physical strain. When neglected, the symptoms of low fever sometimes existed, and led, after a year or more of lingering disease, to an ultimately fatal result.

The author traced a probable connection between this slow fever and the rheumatic phenomena which sometimes supervene upon a neglected case of simple continued fever. Excess of muscular waste-products were present in the circulation in both cases, and as Dr. Latham had explained, the development of rheumatism arose from the action of uric acid on the nerve centres, leading in special cases to the secondary development of lactic acid in connection with muscular metabolism; so he (Dr. Knott) would explain the train of symptoms specially described in this communication to the permanent overthrow of the influence of the thermo-taxic nervous mechanism—resulting from the prolonged retention in the circulation of the products of excessive muscular waste.

The chemistry of muscular change was considered in detail, and the influence of the nervous mechanisms over animal heat was more fully considered. The paper concluded with some suggestions as to treatment.

The President said Mr. Knott's paper not only dealt with the peculiar febrile conditions following over-exertion, but went to the root of the general subject of pyrexia—one of the most important practical subjects that could be brought before the Academy.

Dr. Nixon asked, assuming Dr. Knott established the occurrence of fever as a result of over-exertion, and that the chemical changes indicated in the muscles were the result of over-exertion, why was not fever a constant quantity in cases of over-exertion? M. Longet stated that, on ascending Mont Blanc to a height of 4,300 metres, there was no change in his temperature, and only a slight change in respiration; but on ascending 300 metres more the temperature fell considerably. Thus here was an instance of over-exertion followed not by an increase of temperature, but by a sensible decrease. No doubt, in cases where there was predisposition to feverishness, over-exertion, whether mental or physical, would be apt to generate a condition which otherwise might remain quiescent. Some years ago Sir James Paget called attention to the fact that a very slight wound might be followed by a considerable amount of fever if the patient was subjected to conditions of mental or bodily overstrain. Hence the difficulty in recognising over-exertion, *per se*, as the cause of feverishness. The condition that produced a peculiar kind of fever in connection with over-exertion was rheumatism. Certain products of wear and tear accumulate in the blood, producing the feverish phenomena supposed to be associated with lactic acid in the blood. But whether the occurrence of a special form of fever connected with an overtaxed muscular system was to be acknowledged was a matter of doubt.

Dr. Walter Smith, while recognising the extreme importance of physiological chemistry, regarded the increase of knowledge at present attained as confined to the terminal products of the mechanism of the body. Of the intermediate or transitional stages the food or drug went through there was no proof, and Latham's chemical formulæ could scarcely be ranked higher than ingenious speculations. There was, however, one fundamental in organic chemistry as applied to physiology—namely, the extraordinary stability of the benzine nucleus. Not a single instance was known of any aromatic body in which the benzine nucleus was destroyed in its passage through the body. How different was it, on the other hand, with the fat group, which underwent combustion and oxidation, burning practically in the same way as a candle. The important point of difference was that the inorganic molecules were never broken up, whereas the organic were broken up and burned and escaped in the urine as alkaline carbonates, and therefore fulfilled different functions from the inorganic. The urine of a patient could not be rendered acid by the mineral acids. He suggested, as an additional factor to over-exertion, that some of Dr. Knott's cases might be attributable to heat fever, or thermic disturbance set up or contributed to by exposure to the summer heat, as well as the effects of over-exertion.

Dr. John Wm. Moore alluded to a recent American theory by Dr. Flint, that pyrexia or the development of feverishness depends to a large

extent on the derangement of the animal mechanism, which provides for the production of water in the system. He was surprised at the term "simple continued fever" being used in connection with attacks of pyrexia running a long course, having regard to the fact that one of the synonyms for simple continued fever was ephemeral fever.

The PRESIDENT said there was no doubt there was a fever which took five or six weeks to run its course, and yet was not typhoid or enteric fever. It prevailed from time to time in Dublin. Sixteen or seventeen years ago he recorded a number of such cases. The present Registrar-General, then associated with Cork-street Hospital, and therefore having extensive opportunities of judging, was at issue with him on the point; but the opportunity presented itself, at the end of thirteen years, for a *post-mortem* examination in one of those cases—that of a girl—and the Peyer's patches were as healthy as ever, so that it was perfectly plain she never had typhoid fever. Sometimes pneumonia was developed by severe muscular exertion, but he had no clinical knowledge of the illness Dr. Knott had described.

DR. KNOTT replied.—He believed rather in Latham's formulæ than in the American theory, which, however, was very ingenious.

The Section adjourned.

IMMEDIATE CURE OF WHOOPING-COUGH.

DR. MOHN reports seven cases of whooping-cough, cured by the simple process of fumigating the patient's room, bedding, &c., with sulphurous acid. The following (*Medical Record*) is the plan:—"In the morning the patient is clothed only in linen, and taken out of the bedroom. In the bedroom are left the bedding, linen, clothes, playthings, and everything that cannot be washed. Then sulphur is burned in the proportion of twenty-five grammes to every cubic metre of space in the apartment. After five hours the room is aired. In the evening the patient sleeps in a perfectly pure atmosphere, and in the morning he is cured."—*St. Louis Medical and Surgical Journal.*

POTASSIUM PERMANGANATE IN AMENORRHŒA.

DR. MARSHALL, of San Francisco, after employing this drug in fifty cases of amenorrhœa, has arrived at the following conclusions:—1. The permanganate acts satisfactorily in about seventy per cent. of "selected cases." 2. It should be administered one or two hours after eating. The disagreeable action on the stomach may be relieved by combining it with the following:—Oxalate of cerium, 1 grain; hydrochlorate of cocaïn, 1-6 grain; subnitrate of bismuth, 5 grains; powdered ipecac., 1-60 grain. The writer also states that this drug has a marked tonic effect, and generally causes mental exhilaration.—*Canadian Practitioner.*

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, B.A., M.D., Univ. Dubl.; F.K.Q.C.P.; F. R. Met. Soc.; Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

Vital Statistics

For four Weeks ending Saturday, December 3, 1887.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns	Weeks ending				Towns	Weeks ending			
	Nov. 12.	Nov. 19.	Nov. 26.	Dec. 3.		Nov. 12.	Nov. 19.	Nov. 26.	Dec. 3.
Armagh -	10·3	31·0	20·7	5·2	Limerick -	13 5	16·2	21·6	16·2
Belfast -	22·3	28·3	29 0	36·0	Lisburn -	14·5	19·3	0·0	24·2
Cork -	28·6	12·3	26·6	22·1	Londonderry	21·4	28·5	19·6	25·0
Drogheda	8·5	8·5	33·8	29·6	Lurgan -	46·2	20·5	30·8	30·8
Dublin -	31·3	34·0	32·6	34·7	Newry -	10·5	21·1	7·0	42·1
Dundalk -	17·5	13·1	17·5	26·2	Sligo -	24·1	4·8	28·9	19·2
Galway -	23·5	10·1	23·5	23·5	Waterford -	18·5	25·5	25·5	25·5
Kilkenny	8·5	29·6	29·6	38·1	Wexford -	12·8	12·8	12·8	38·5

In the week ending Saturday, November 12, the mortality in twenty-eight large English towns, including London (in which the rate was 19·2), was equal to an average annual death-rate of 20·0 per 1,000 persons living. In Glasgow the rate was 22·1; and in Edinburgh it was 16·5.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 25·3 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 4·6 per 1,000, the rates varying from 0·0 in nine of the districts to 8·6 in Wexford—the 3 deaths from all causes registered in that district comprising 2 from measles. Among the 96 deaths from all causes registered in Belfast are 7 from measles, 3 from

scarlatina, 1 from typhus, 5 from whooping-cough, 2 from diphtheria, 1 from simple continued fever, and 3 from diarrhœa. The 44 deaths in Cork comprise 1 from typhus, 1 from enteric fever, and 2 from diarrhœa; and the 8 deaths in Waterford comprise 2 from whooping-cough.

In the Dublin Registration District the births registered during the week amounted to 160—78 boys and 82 girls—and the deaths to 217—93 males and 124 females.

The deaths represent an annual rate of mortality of 32·0 in every 1,000 of the estimated population; omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 31·3 per 1,000.

Fifty deaths from zymotic diseases were registered, being 1 over the number for the preceding week, and 24 over the average for the forty-fifth week of the last ten years. They comprise 1 from small-pox—that of an infant six months old who died in Cork-street Hospital, and with regard to whom the Registrar's return affords no information respecting vaccination—10 from measles, 20 from scarlet fever (scarlatina), 5 from whooping-cough, 3 from enteric fever, 3 from diarrhœa, 3 from dysentery, 1 from erysipelas, &c.

At the close of the preceding week there was 1 case of small-pox in hospital; 2 cases of the disease were admitted during the week, and 1 patient died, leaving two as the number in hospital on Saturday.

Twenty-eight cases of scarlatina were admitted during the week, being 3 under the admissions for the preceding week; 14 patients were discharged, 5 died, and 95 remained under treatment on Saturday, being 9 over the number in hospital at the close of the preceding week.

Nine cases of measles, 4 of typhus, and 2 of enteric fever were admitted, against 17, 2, and 6 respectively for the preceding week; 23 cases of measles, 9 of typhus, and 36 of enteric fever remained under treatment in hospital on Saturday, November 12.

Forty-seven deaths from diseases of the respiratory system were registered, being 9 in excess of the average for the corresponding week of the last ten years, and 3 over the number for the week ended November 5. They comprise 29 from bronchitis, 6 from pneumonia or inflammation of the lungs, and 2 from croup.

In the week ending Saturday, November 19, the mortality in twenty-eight large English towns, including London (in which the rate was 20·3), was equal to an average annual death rate of 21·1 per 1,000 persons living. In Glasgow the rate was 23·9; and in Edinburgh it was 20·5.

The average annual death-rate in the sixteen principal town districts of Ireland was 27·0 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts

were equal to an annual rate of 3·8 per 1,000, the rates varying from 0·0 in nine of the districts to 6·0 in Belfast—the 122 deaths from all causes registered in that district comprise 5 from measles, 1 from scarlatina, 1 from typhus, 11 from whooping-cough, 2 from diphtheria, 1 from simple continued fever, 4 from enteric fever, and 1 from diarrhœa. Among the 12 deaths from all causes registered in Limerick are 1 from typhus, and 1 from diarrhœa. The 16 deaths in Londonderry comprise 1 from enteric fever, and 2 from diarrhœa; and of the 7 deaths in Kilkenny 1 resulted from enteric fever.

In the Dublin Registration District the births registered during the week amounted to 193—103 boys and 90 girls—and the deaths to 234—116 males and 118 females.

The deaths represent an annual rate of mortality of 34·6 in every 1,000 of the estimated population; omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 34·0 per 1,000.

Forty deaths from zymotic diseases were registered, being 15 over the average for the corresponding week of the last ten years, but 10 under the number for the week ended November 12. They comprise 5 from measles, 8 from scarlet fever (scarlatina), 3 from whooping-cough, 3 from diphtheria, 1 from ill-defined fever, 3 from enteric fever, 6 from diarrhœa, &c.

Two cases of small-pox were admitted to hospital during the week; these, with the 2 under treatment at the close of the preceding week, make 4 as the number of cases of this disease in hospital on Saturday, November 19.

Only 12 cases of scarlatina were admitted to hospital, against 28 admissions for the preceding week; 21 scarlatina patients were discharged during the week, 2 died, and 84 remained under treatment on Saturday, being 11 under the number in hospital on Saturday, November 12.

Seven cases of measles, 4 of typhus, and 6 of enteric fever were admitted, against 9, 4, and 2 respectively for the preceding week; 23 cases of measles, 12 of typhus, and 36 of enteric fever remained under treatment in hospital on Saturday.

Fifty-three deaths from diseases of the respiratory system were registered, being 6 over the number for the preceding week, and 11 in excess of the average for the forty-sixth week of the last ten years; they comprise 33 from bronchitis and 14 from pneumonia or inflammation of the lungs.

In the week ending Saturday, November 26, the mortality in twenty-eight large English towns, including London (in which the rate was 23·0), was equal to an average annual death-rate of 23·5 per 1,000

persons living. In Glasgow the rate was 24·4; and in Edinburgh it was 23·7.

The annual average death-rate represented by the deaths registered last week in the sixteen principal town districts of Ireland was 28·3 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 4·5 per 1,000, the rates varying from 0·0 in Limerick, Galway, Newry, Wexford, Dundalk, and Lisburn to 11·6 in Waterford—the 11 deaths from all causes registered in the last-named district comprising 3 from scarlatina, 1 from typhus, and 1 from whooping-cough. Among the 125 deaths from all causes registered in Belfast are 9 from measles, 2 from scarlatina, 10 from whooping-cough, 1 from diphtheria, 1 from simple-continued fever, 3 from enteric fever, and 3 from diarrhœa.

In the Dublin Registration District the births registered during the week amounted to 185—91 boys and 94 girls—and the deaths to 229—118 males and 111 females.

The deaths represent an annual rate of mortality of 33·8 in every 1,000 of the estimated population; omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 32·6 per 1,000.

Forty-four deaths from zymotic diseases were registered, being 4 over the number for the preceding week, and 13 over the average for the forty-seventh week of the last ten years; they comprise 8 from measles, 11 from scarlet fever (scarlatina), 1 from typhus, 6 from whooping-cough, 3 from diphtheria, 1 from ill-defined fever, 1 from enteric fever, 2 from dysentery, &c.

Three cases of small-pox were admitted to hospital during the week, being 1 over the admissions for the preceding week; 7 cases of the disease remained under treatment in hospital on Saturday.

Eighteen cases of scarlatina were admitted, against 12 for the preceding week; 14 scarlatina patients were discharged, 5 died, and 83 remained under treatment on Saturday, being 1 under the number in hospital on Saturday, November 19.

In the week ended November 19, 7 cases of measles, 4 of typhus, and 6 of enteric fever were admitted to hospital; during the week now under discussion no cases of enteric fever and but 5 of measles and 2 of typhus were admitted. Twenty cases of measles, 13 of typhus, and 32 of enteric fever remained under treatment in hospital at the close of the week.

Fifty-four deaths from diseases of the respiratory system were registered, being 6 over the average for the corresponding week of the last ten years, and 1 over the number for the week ended November 19; they comprise 30 from bronchitis, 10 from pneumonia or inflammation of the lungs, and 2 from croup.

In the week ending Saturday, December 3, the mortality in twenty-eight large English towns, including London (in which the rate was 21·1), was equal to an average annual death-rate of 22·5 per 1,000 persons living. In Glasgow the rate was 25·9 ; and in Edinburgh it was 21·9.

The average annual death-rate in the sixteen principal town districts of Ireland was 31·6 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 5·0 per 1,000, the rates varying from 0·0 in Limerick, Londonderry, Sligo, and Lisburn, to 15·4 in Lurgan — the 6 deaths from all causes registered in the last-named district comprising 2 from typhus, and 1 from diarrhœa. Among the 155 deaths from all causes registered in Belfast are 9 from measles, 5 from scarlatina, 7 from whooping-cough, 1 from diphtheria, 2 from simple continued fever, 5 from enteric fever, and 5 from diarrhœa. The 34 deaths in Cork comprise 1 from typhus and 1 from enteric fever. Among the 9 deaths in Kilkenny are 1 from scarlatina and 1 from diarrhœa. The 9 deaths in Wexford comprise 2 from measles and 1 from scarlatina, and the 6 deaths in Dundalk comprise 1 from scarlatina and 1 from diarrhœa.

In the Dublin Registration District the births registered during the week amounted to 177—92 boys and 85 girls—and the deaths to 237—128 males and 109 females.

The deaths represent an annual rate of mortality of 35·0 in every 1,000 of the estimated population ; omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 34·7 per 1,000.

Thirty-five deaths from zymotic diseases were registered, being 12 in excess of the average for the corresponding week of the last ten years, but 9 under the number for the week ended November 26 ; they comprise 1 from varicella (chicken-pox), 8 from measles, 13 from scarlet fever (scarlatina), 4 from whooping-cough, 1 from diphtheria, 1 from simple-continued fever, 2 from enteric fever, 2 from diarrhœa, &c.

Three cases of small-pox were admitted to hospital, being equal to the admissions for the preceding week ; 10 cases of the disease remained under treatment in hospital on Saturday.

Eleven cases of scarlatina were admitted, being 7 under the admissions for the preceding week ; 18 scarlatina patients were discharged during the week, 1 died, and 75 remained under treatment on Saturday, being 8 under the number in hospital on Saturday, November 26.

Three cases of typhus and 3 of enteric fever were admitted ; in the preceding week no cases of the latter and but 2 of the former disease were admitted. Thirteen cases of typhus and 24 of enteric fever remained under treatment in hospital on Saturday.

Sixty-one deaths from diseases of the respiratory system were regis-

tered, being 7 over the number for the preceding week, and 14 over the average for the forty-eighth week of the last ten years; they comprise 44 from bronchitis, and 9 from pneumonia or inflammation of the lungs.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N. Long. 6° 15′ W., for the Month of November, 1887.

Mean Height of Barometer,	29·679 inches.
Maximal Height of Barometer (on 15th, at 9 p.m.)	30·360 „
Minimal Height of Barometer (on 1st, at 9 a.m.)	28·538 „
Mean Dry-bulb Temperature,	42·1°.
Mean Wet-bulb Temperature,	40·4°.
Mean Dew-point Temperature	38·4°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·235 inch.
Mean Humidity,	87·3 per cent.
Highest Temperature in Shade (on 26th),	55·4°.
Lowest Temperature in Shade (on 24th),	28·0°.
Lowest Temperature on Grass (Radiation) (on 24th),	20·0°.
Mean Amount of Cloud,	63·2 per cent.
Rainfall (on 18 days),	3·012 inches.
Greatest Daily Rainfall (on 5th),	·870 inch.
General Directions of Wind,	S.W., W., N.W.

Remarks.

November differed from all the previous months of 1887 in the fact that its rainfall was decidedly in excess of the average. This, however, was due to an exceptionally heavy downpour of ·870 inch on the 5th—a measurement which is unusual for November, in which rain falls frequently rather than heavily. The month was cold and very unsettled, damp, and dull. Fog was very prevalent in the third week. The barometer was extremely low at the commencement, and remained unsteady throughout. Temperature also varied remarkably and quickly—the highest and lowest readings of the thermometer being recorded within a period of some 48 hours between the 24th and 26th. The prevailing winds were westerly (S.W. to N.W.), but in the second week a *warm* easterly breeze was experienced.

In Dublin the mean temperature (42·6°) was—as in October and September—decidedly below the average (44·4°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 42·1°. In the twenty-two years ending with 1886, November was coldest in 1878 (M. T. = 38·2°) and in 1870 (M. T. = 42·2°), and warmest in 1881 (M. T. = 50·3°). In 1886, the M. T. was as high as 46·4°; in the year 1879 (the cold year) it was 43·9°.

The mean height of the barometer was 29·679 inches, or 0·188 inch below the average value for November—namely, 29·867 inches, and 0·465 inch below the mean value for October, 1887, viz., 30·144 inches. The mercury marked 30·360 inches at 9 p.m. of the 15th, and fell to 28·538 inches at 9 a.m. of the 1st. The observed range of atmospherical pressure was, therefore, 1·822 inches—that is, a little more than an inch and eight-tenths. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 42·1°, or 4·4° below the value for October, and 11·0° below that for September, 1887; that calculated by Kaemtz's formula—viz., *min.* + (*max.* — *min.* × ·41) = *Mean Temp.*—from the means of the daily maxima and minima was 41·8°, or 1·9° below the average mean temperature for November, calculated in the same way, in the twenty years, 1865–84, inclusive (43·7°). The arithmetical mean of the maximal and minimal readings was 42·6°, compared with a twenty years' average of 44·4°. On the 26th the thermometer in the screen rose to 55·4°—wind S.W.; on the 24th the temperature fell to 28·0°—wind calm. The minimum on the grass was 20·0° on the 24th. The rainfall was 3·012 inches, distributed over 18 days; both rainfall and rainy days were perceptibly more than the values for the preceding month of October—viz., 1·398 inches on 11 days. The average rainfall for November in the twenty years, 1865–84, inclusive, was 2·312 inches, and the average number of rainy days was 16·8. The rainfall, therefore, was decidedly above the average and the rainy days were slightly above it. In 1876 the rainfall in November was large—3·614 inches on 20 days. In 1872, also, 3·414 inches fell on 24 days. On the other hand, in 1870 only 1·218 inches were measured on but 11 days, and in 1879 only 1·251 inches on but 10 days.

A solar halo appeared on the 17th. A lunar corona was seen on the 29th. High winds were noted on 10 days, and attained the force of a gale on three occasions, the 1st, 26th, and 27th. The atmosphere was more or less foggy on nine occasions in Dublin, particularly on the evening of the 20th, when a dense vapour fog, and severe cold prevailed. Hail fell on the 14th, 15th, and 19th. Temperature exceeded 50° in the screen on 7 days, while it fell below 30° on 3 days.

The weather of the week ending Saturday, the 5th, was very stormy, with heavy rain in most districts of the United Kingdom. In Dublin this was the stormiest and rainiest week of 1887. The mean height of the barometer was only 29·036 inches, and at 9 a.m. of Tuesday, the 1st, the reading was as low as 28·538 inches. The total precipitation for the week amounted to 2·096 inches, or rather more than one-sixth of the rainfall of the first ten months of 1887—namely, 12·366 inches. Of this quantity ·629 inch fell on Monday, October 31, and ·870 inch on Saturday, November 5. During the greater portion of this stormy, unsettled period, the barometer was relatively high both in Spain and over

Northern Russia, while, in addition to numerous secondary disturbances, four important atmospherical depressions appeared in the neighbourhood of our islands. Temperature was about the average, and no extremes of either heat or cold were recorded.

In the second week (6th–12th, inclusive) the weather was again excessively dull and rainy—although the downpour was neither as heavy nor as continuous as in the previous week. The prevailing wind was E.N.E., and temperature was uniform and rather high for the time of year, owing chiefly to the clouded state of the sky, by which radiation was checked. The mean dry-bulb temperature (46·3°) was 5·5° above that of the week ending October 15 (40·8°). The extreme mildness and dampness of the easterly winds during this period attracted general attention—the mean values both of temperature and of rainfall having been considerably above the average, not only at the British and Irish stations, but on the shores of the North Sea also. In the earlier part a depression recurved on reaching Havre, and after travelling in a westerly and south-westerly direction moved out to the Atlantic over the Bay of Biscay.

From the 13th to the 19th, inclusive, the weather was very cold throughout—the mean temperature (37·3°) was 9° below that of the preceding week, and 7·1° below the average for November. The barometer fell from 30·360 inches at 9 p.m. of Tuesday to 29·228 inches at 9 a.m. of Saturday. Hail was observed on Monday, Tuesday, and Saturday. Rain fell on two days to the amount of ·323 inch. Fog was frequently observed at the English stations, where also hard frosts were experienced on the nights of Tuesday and Wednesday, the 15th and 16th, the lowest readings in the screen being 16° at Llandovery, 17° at Rothamsted, 19° at Oxford, and 20° at Loughborough. Snow and sleet fell in the S.E. of England on the 18th.

During the week ended Saturday, the 26th, the weather was changeable, chiefly cold, and at times rainy. The contrast between Sunday and Saturday as regards temperature was remarkable—the former day was piercingly cold, with dense fog towards evening, the mean temperature being only 31·6°; the latter day was mild and squally, the mean temperature 51·3°, or nearly 20° above that of Sunday. Rain fell on five days to the total amount of ·541 inch, the maximal fall being ·240 inch on Saturday. Over the whole country the weather of this period was singularly changeable and unstable—at times cold and anticyclonic, with light varying winds, frost and fog; at other times very warm and showery, with southerly to westerly gales and unusual "visibility." On the 26th fresh to strong gales occurred in many parts of the country, and temperature was very high for the time of year.

The last four days were chiefly fine in Dublin, but on the night of the 28th, a well-defined subsidiary depression passed across the S.E. of

England, causing heavy rains in the English Channel and the south and east of that country. As the month closed, temperature rose in Ireland, with a damp, murky atmosphere.

From January 1st up to and including November 30th, rain fell in Dublin to the amount of only 15·378 inches on but 141 days—the average for the ten months based on twenty years' observations being 25·499 inches, and 177·6 rainy days. Thus, the rainfall was equal to only 60·3 per cent. of the average, while the rainy days were equal to 79·4 per cent. of the average.

At Greystones, Co. Wicklow, the rainfall in November amounted to 3·42 inches, distributed over 17 days.

PERISCOPE.

THE LATE DR. WILSON FOX.

Mr. Francis George Heath, Editor of *Illustrations*, having forwarded to Her Majesty a copy of the November issue of that magazine, containing a portrait (never before published) of the late Dr. Wilson Fox, has just received the following message from Sir Henry Ponsonby :—"I am commanded by the Queen to thank you for the copy of *Illustrations*, containing the memoir and excellent portrait of Dr. Wilson Fox."

DEATH FROM INTERNAL HÆMORRHAGE FOLLOWING THE INTRODUCTION OF AN ASPIRATOR NEEDLE.

Mr. Richard Baker, M.B., I.M.S., Surgeon, European General Hospital, Bombay, writes, under date "Blackhall, Balbriggan, Nov. 2nd, 1887," as follows :—"I notice in the October number of your Journal an extract from an American periodical referring to a case of sudden death from the introduction of an aspirator needle into the liver substance. This recalled to me a case which occurred a couple of years ago in Bombay—and was, if I do not mistake, published at the time—in which the introduction of an aspirating needle for the relief of an hepatic abscess was followed by death, with symptoms of internal hæmorrhage ; and the autopsy revealed a wound of the larger branches of the portal vein by the needle, with extensive hæmorrhage into a large abscess cavity."

TREATMENT OF TUBERCULOSIS.

M. Potain gives a teaspoonful of the following solution every morning, mixed with a glass of milk :—Potassium iodide, 1 part ; sodium bromide, 5 parts ; sodium chloride, 10 parts ; water, 100 parts. Mix and dissolve.—*Technics.*

BENIGN AND MALIGNANT GROWTHS OF THE LARYNX.

Mr. Lennox Browne, Senior Surgeon of the Central London Throat and Ear Hospital, Gray's Inn-road, delivered a clinical lecture on Monday, 11th November, 1887, before a large audience of the Medical Profession. The subject was "Benign and Malignant Growths of the Larynx." The author prefaced his remarks by stating that he was prompted to speak on this subject because it was largely occupying the public mind at the present moment, and it was, therefore, one concerning which it was very necessary and desirable to give some accurate information; but at the outset he disclaimed any intention of impertinently interfering with a case he had not seen, far less of speaking in a spirit of jealousy or cavilling criticism, which might be calculated to harass those charged with a terribly anxious responsibility. Benign growths of the larynx were divided into three classes: 1, those which once removed did not recur; 2, those which recur, but in which the recurrent element is not strongly manifested; 3, those in which the recurrence is so persistent as to practically constitute a local malignancy, without, however, infecting the system with the elements of a fatal constitutional disorder. Benign growths were stated to be rare, and to occur in not more than one per cent. of chronic laryngeal disease. The commonest primary cause was active congestion of the mucous membrane, and at least half the cases on record occurred to those whose occupation obliged them to exercise their voice professionally. With regard to treatment, it was insisted that many small growths might be reduced by astringent applications, and that all should, as far as possible, be removed by instruments so guarded as to be incapable of wounding healthy tissue. Such injury was believed to be a not infrequent cause of malignant degeneration of growths which were primarily benign, and Mr. Lennox Browne had been the first to draw attention to this fact so long ago as 1875. The proposition had met with opposition in one or two quarters, but it had been again brought forward prominently during these last few days as if it were something new: evidence appeared to be accumulating in confirmation of the correctness of the lecturer's conclusions on this subject, and doubtless they would soon be generally accepted. The distinction between benign and malignant growths was carefully elaborated, as well as the varieties of malignant formations, such variations denoting varying degrees both of local malignancy and of constitutional infection. The prospects of cure of various operations for removal of those of the graver kind were considered in detail. In justification of those who advise delay of radical treatment by excision, statistics were given to show that, while an enormous percentage of such cases have a rapidly fatal issue, in none is there any recovery of voice or anything more than prolongation of a few years of life of considerable discomfort. No physician would

dream of advising such a hazardous procedure so long as microscopic examination showed the disease to be of an innocent nature. The milder operation of tracheotomy, while less immediately fatal, possesses all the advantages as to extension of life, and a minimum of the dangers and miseries of so-called radical extirpation.

MEASLES IN A PATIENT SEVENTY YEARS OF AGE.

In the Annual Report of the St. Louis Board of Health, summarised in the *St. Louis Courier of Medicine*, we notice a case of death from measles, the patient being over seventy years of age.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Pinol.

Our attention has been called to a product which is being introduced, under the name of "Pinol," to the Medical Profession in this country by Messrs. Burroughs, Wellcome & Co., of Snow Hill Buildings, London, E.C. "Pinol" is a pure essence or volatile oil, distilled from the needle-like spills or ends of the branches of the *Pinus pumilio*, gathered only from those trees which grow in the perpetual snows of the Alps. This selection is made necessary from the fact that the same species of *Pinus* growing at lower altitudes possesses very inferior medical properties, and is unfit for internal administration. "Pinol" is much more volatile than the common pine oils, and has a remarkably agreeable and refreshing odour. As our readers are doubtless aware, extensive therapeutic establishments exist in Homburg, Ischl, Baden-Baden, Reichenhall, and other health resorts for the treatment of rheumatism and gout by means of baths of the extract of pine, followed by applications of "Pinol." The extract is simply the filtered residue remaining after the distillation of "Pinol."

The powerful oxidising agent, to which these preparations owe their important therapeutic properties in no small degree, has been shown to be hydrogen-peroxide. "Pinol" may be used as an inhalation (*Pinol Vaporole*, 30 minims), a gargle, or an embrocation. It may also be employed for fumigation, or as an internal remedy in water, or preferably on a lump of sugar, in doses of 3 or 4 drops. In our hands, it has acted as an efficient remedy in bronchial catarrh (bronchorrhœa). Its therapeutical action resembles that of terebene or of ordinary turpentine, but it is much more agreeable than either of these remedies.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. V.—*A Case of Cerebral Cyst.*[a] By KENDAL FRANKS, M.D. Univ. Dubl.; Fellow and Member of Council of the Royal College of Surgeons in Ireland; Fellow of the Royal Medical and Chirurgical Society of London; Surgeon to the Adelaide Hospital; ex-Scholar of Trinity College, Dublin.

FOR various reasons I am glad that I have this opportunity of laying before the Medical Section of the Royal Academy of Medicine the details of a case which I think will be of interest to the members, chiefly on account of the questions of cerebral localisation which it opens up. Such questions are of great importance in the present day, when so many forces seem to combine to draw all organs of the body, and notably the brain, from out of the calm influence of the physician into the all-devouring surgical vortex. I need not, therefore, apologise to the members of the Medical Section for bringing this case under their notice, for I trust that they will express an opinion upon it, especially as to the degree of definiteness, in regard to localisation, which a case should present which would warrant the adduction of surgical aid:—

CASE.—The case was that of a married lady, aged forty, who consulted me for the first time on the 7th of September last. Her husband, who accompanied her, gave the following history:—In June last she went out

[a] Read before the Medical Section of the Royal Academy of Medicine in Ireland, Friday, December 16, 1887. [For the discussion on this paper see page 173.]

one hot day, in Devonshire, at 6 a.m., and walked about till noon, when she returned home. She complained much of the heat. She remained perfectly well till 8 30 p.m., when she suddenly fell on the floor in an unconscious condition. She was carried up to bed, and remained unconscious for two hours, though after the first half-hour she was able to be roused sufficiently to answer questions. She then went to sleep and awoke, quite conscious, at 3 a.m. It was noticed that after this attack her memory for words was affected. She could speak quite well for a time, but then some word would fail her. Three days later she had another attack, which was not so severe as the first, but the memory for words was worse after it. Up to the middle of July similar attacks, but diminishing in intensity, occurred every four or five days. From that time till I saw her she had no definite attacks, but occasionally felt as if one were coming on, when she would sit or lie down until the sensation passed. These attacks were called faints by her friends; but after careful inquiry I satisfied myself that they were epileptiform in character. It was observed that after each attack her memory for words became distinctly worse. The first week in August she went to Eastbourne, and was there seen by Dr. Crichton. A week later she visited her sister in County Kilkenny, and subsequently went on a visit to another sister near Bray.

When I first saw her I ascertained that she had always enjoyed excellent health. She had been eight and a half years married, and had six children, all of whom were healthy. Her appetite was always very good, and the functions were normal. Her husband told me that previous to the first attack he had thought her not very well for two months. She complained much of the heat, but there had been nothing apparently the matter with her. He attributed her illness to the effects of sunstroke.

I found her looking in very good health. The only thing apparently wrong was a certain amount of aphasia. This consisted entirely in the forgetfulnes of certain words. Some sentences were perfectly clear and well expressed. Then, again she would forget the name of a chair, or point to her head and ask for the word. She was aphasic, but the aphasia was not well defined or absolute, and was of the form called *amnesic*. There were no paralyses whatever.

I explained to the husband that I thought her case was a very serious one. There was some affection of the brain, but what its nature was, or its exact position, I could not say, more than that it was located on the left side. She complained of occasional headache, which she referred to the top of her head, to the region of the coronal suture, and which she stated was worse on the left than on the right side. As they purposed returning to England in a few days, I advised the husband to place his wife under medical care, and if they passed through London to consult Dr. Ferrier about her.

In the absence of any more definite indication, and looking upon the attacks as epileptiform, I placed her, in the first instance, on a mixture containing bromides, digitalis, and arsenic. Of this mixture she only took two doses. After the first, the headache, she said, was distinctly better, but after the second she vomited. The following evening she became restless, partially delirious, and the pain in the top of the head very severe, and vomiting incessant. I saw her at 6 30 p.m. on the 9th. She was then suffering from persistent cerebral vomiting. The tongue was quite clean. She was constanly moaning and complaining of the pain in the top of her head, chiefly on the left side. The aphasic symptoms were more marked. The pulse was slow. I at once shaved a patch on the left side of the head, about 4 inches by 3, and applied a blister. She also got 3 grains of calomel and an opiate draught. The result was that she had a quiet night, and the next day the headache and vomiting were better. On the night of the 10th the violent symptoms returned, but on the 12th she was so much better that she was moved downstairs, and had subsequently a good night. On the 14th of September cerebral vomiting, intense pain in the head, and slowness and weakness of the pulse came on. Since the night before she had not been able to pass urine. I asked Dr. Head to see her with me. A catheter passed drew off 10 ozs. of healthy urine. Sinapisms were applied to the back of the neck and over the cardiac region. The next morning Dr. Head again saw her in consultation. We then discussed the question of operation, and the chances which it might afford. The conclusions arrived at were that there was a tumour or an abscess in the brain, but that the weight of evidence was strongly in favour of tumour. That the aphasia pointed to the left side of the head, but that the aphasia was not sufficiently definite in itself to localise the tumour to Broca's space, and that the total absence of all paralytic or spasmodic symptoms rendered localisation impossible. Under these circumstances, we agreed that we could not recommend any attempt at operation. These facts were fully explained to the husband, and we told him that until some symptom arose which would more clearly indicate the position of the tumour, we could not advise an attempt in which the chances of success were so small. After consultation we decided to put her on small doses of calomel and extract of cannabis indica ($\frac{1}{2}$ grain of each) three times a day. For some days afterwards she seemed to improve slowly, the pain in the head was not acute when sitting up and perfectly quiet, but any attempt at movement, or trying to lie on the left side, brought on a spasm of pain, with weakness of the pulse, pallor and coldness of the extremities. Immediately after each spasm of pain the sight became rather dim for some time, and then she became drowsy and inclined to sleep. A note taken at the time states that "her memory seems bad for recent events. She repeatedly asks the same question, and seems to forget the answer."

There also seemed to be some paralytic condition of the bladder, as she was totally unable to pass urine, and the catheter had to be passed four or five times a day. This began on the 13th of September, but five days later she regained power over the viscus, and the catheter was abandoned, to be resumed, however, ten days later, when the paralytic condition returned. On the 17th of September she again had a bad turn, with violent pain and vomiting. An appointment was made with Dr. Head for a consultation on the morrow, but in the morning she had again improved so much that her husband wrote to postpone it.

As there was some difficulty in keeping the blister on the head open, and as it seemed to have relieved the pain, on the 19th, with Dr. Head's approval, I made an issue about the size of a shilling in the same place. The pain in the head gradually got less, but occasionally she had acute exacerbations.

On the 22nd of September her condition seemed much improved. She had no pain in the head, her colour was good, and she seemed brighter and clearer than she had done for days. There was no fœtor on the breath, but the gums seemed slightly tender; the calomel in the pills was stopped, and she was given cannabis indica alone. The pulse was very variable—sometimes 60, and in a few minutes rising to 90, and soon falling again. Each day she was moved into an arm-chair for some hours, until the 28th, after which she did not like to be disturbed. There was very little alteration in the symptoms until the 28th, when she first became incoherent in the afternoon, and very drowsy. The calomel was again resorted to—$\frac{1}{2}$ grain every third hour. The pulse fell to 50–55 in the minute, and was very weak. The paralytic condition of the bladder reappeared, necessitating the use of the catheter. Some days previously she complained that she could not see people standing on the right side of the bed distinctly, that they were all blurred, but that she could see them well on the left side, and she asked that we should move to that side. Dr. Head saw her by himself on the 2nd of October, as I was absent in the country. Mr. Swanzy, who saw her with me in consultation on October 3rd, stated the paresis of the right external rectus was so slight that it could not be detected by the eye. The ophthalmoscope revealed an optic neuritis so slight that it was almost imperceptible. Subsequent to this, at my request, Mr. Swanzy called upon Dr. Head, and they discussed the case. Dr. Head then wrote to me to the effect that, in the absence of any localising symptom, he did not consider an operation would be prudent.

The day following Mr. Swanzy's examination I found that she had partial paralysis of the soft palate, giving rise to a certain amount of stertor, but fluids did not return through the nose.

On the 3rd of October my attention was called by her friends to what they called drooping of the left eyelid. I made a careful examination and

found that there was no true ptosis of the left eye, but that there was a partial paralysis of the right orbicularis. She could open both her eyes well, but the right eye closed more slowly and less perfectly than the left. This gave a wide-awake intelligent look to the right eye, which her semi-unconscious drowsy condition belied.

On the 4th of October the stupor increased. During sleep she snored loudly, and in her waking moments was unable to speak, and put out her tongue only when told to do so repeatedly. That day I again spoke to her husband on the subject of operation, and put before him the state of the case. I told him plainly that the case was hopeless, and that the position of the tumour was quite uncertain, except that it was situated in the left side of the brain. I asked him if he would like an attempt made to reach it, but he replied that, with so many chances against us, he would not give his consent. I then told him that, under the circumstances, I could not honestly recommend it, and that in this opinion Dr. Head coincided.

On the 5th of October she began to pass under her in the bed. The first time this occurred she was apparently conscious of the act, as she made signs to the nurse, but on subsequent occasions she seemed quite unconscious of it. She lay sunk down in bed in a condition of absolute unconsciousness. Up to this the pulse had been slow, and she had taken a fair amount of nourishment in the intervals of the attacks of retching. On the evening of the 6th the pulse began to rise, marking 100 in the minute.

On the 8th of October her condition of profound coma was unaltered, but the pulse was still rising.

As the relatives wished for another opinion, at my request Mr. Wheeler saw the patient on October 9th, between 1 and 2 o'clock p.m. As I was unable to meet him at this hour, I asked Mr. Wheeler to see the patient by himself. I subsequently learned that at this time the condition was one of profound coma, the pulse was over 130, and the temperature was over 101° F.

What took place then Mr. Wheeler will be best able to relate; as being absent, I could state only what was told me. He advised, I understand, immediate operation. The husband consented to an operation being performed if it was advised, making it a condition that I should perform it.

On my arrival in the evening I visited the patient and found that the pulse had reached 150. It had not yet begun to flicker. The comatose condition was unchanged. When discussing the case with Mr. Wheeler we agreed that there was either a tumour or an abscess in the left half of the brain. I was strongly in favour of a tumour on the grounds that during the whole course of the illness there had been no pyrexia, no rigors—in fact, none of the usual symptoms indicative of the formation of

pus. There was no history of injury or of any previous disease likely to terminate in cerebral abscess, and although an abscess in the brain might be wanting in the usual indications of pus formation, still this was sufficiently uncommon to warrant me in diagnosticating a tumour. On the other hand, Mr. Wheeler's opinion was that there was an abscess present, and he proposed to trephine over Broca's space. I objected to this on the ground that aphasia, even when complete, which in this case it was not, was not sufficient to localise the disease by itself, and the paralytic symptoms which did manifest themselves gave us absolutely no assistance. To this Mr. Wheeler replied that the symptom pointing to Broca's space indicated that as the proper position to trephine—that when the circle of bone were removed he would explore the brain beneath with a grooved needle, and if he found nothing he would trephine in the neighbourhood and repeat the exploratory process. To this I would not consent, and suggested to him the propriety of again visiting the patient. After an examination he concurred with me that the condition of the patient was such that an operation was hopeless. He then informed the relatives in my presence, about 10 p.m., that the patient was so much worse than she had been at 2 p.m. that any operative procedure was out of the question.

The patient died the following evening, October 10th, at 7 30 p.m. The next morning, having received the consent of the relatives to a *post-mortem* examination being made, I telegraphed to Dr. Bewley, asking him to bring down the necessary instruments in order to examine the brain. I also telegraphed to Dr. Head and to Mr. Wheeler, neither of whom, however, was able to attend. Dr. Bewley made the *post mortem* that afternoon, twenty-two hours after death, in my presence. He reported:—

"The following is a brief account of the condition in which the brain of Mrs. —— was found at the *post-mortem* examination:—The skull and membranes of the brain were perfectly healthy. The surface of the brain appeared quite normal in every part, except that the left *posterior* part of the brain seemed rather softer to the touch than the opposite side. In the left temporo-sphenoidal lobe there was a large cavity, apparently measuring about two inches in antero-posterior diameter. This cyst was separated from the surface by a thin layer of healthy brain tissue—it had pushed the posterior part of the left lateral ventricle inwards towards the middle line. The cyst was lined by a soft, flocculent grayish-red layer of tissue; it was not like a regular cyst wall, but gave the idea of disintegrating brain tissue. The cyst was filled with clear serous fluid. The rest of the brain appeared normal. The lining (or rather tissue) of the cyst on microscopic examination showed nothing but some brain tissue and blood vessels. There was no sign of old hæmorrhage (hæmatoidin crystals or other remains of blood-clot) or of inflammation."

I may add that the cyst described above by Dr. Bewley occupied the posterior portion of the temporo-sphenoidal lobe.

I will now shortly summarise the symptoms which appeared in this case. The first symptom was an epileptiform attack, which occurred early in June. There were recurrences of these fits at short intervals of a few days, which gradually grew less intense until about the middle of July, when they became so slight as to appear only as very mild attacks of *petit mal*. The relatives had no recollection of any muscular twitchings or convulsive movements. The next symptom was a form of aphasia which showed itself immediately after the first epileptiform fit in a very slight degree, but which became intensified after each subsequent fit. The aphasia was distinctly of the amnesic variety. Thirdly, we found headache over the top of the head, corresponding to the coronal suture, and which was worse on the left than on the right side. This pain had violent exacerbations, was increased by movements, and made it impossible to her to lie on the left side. Fourthly in the order of sequence, cerebral vomiting, which appeared for the first time on the 9th of September, two days after I first saw her. Fifthly, a paralytic condition of the bladder, appearing first on the 13th of September, lasting for five days, disappearing again for ten days, and again returning and lasting till coma supervened. Sixthly, about the 25th of September, some inappreciable paresis of the right internal rectus. Seventhly, on the 3rd of October, a partial paralysis of the right orbicularis muscle. Eighthly, on the 4th of October, partial paralysis of the soft palate. The supervention of coma was gradual. The first symptoms of it may be said to have appeared thirteen days before death, but it did not become profound until October 5th, five days before her demise.

During the whole period the pulse was very variable, generally below normal, and becoming very slow during the exacerbations of pain and cerebral vomiting.

Taking all these symptoms together, I do not think it was very difficult, even at an early stage, to arrive at the diagnosis of cerebral tumour. But, when we come to the question of localisation, it is an entirely different matter. No well-defined motor centre in the cortex of the brain seemed involved. There was no paralysis of the extremities or trunk, except it be the condition of the bladder, which, in some inexplicable way, disappeared for ten days, and this affords no help in solving the problem.

We then must fall back (1) on a paresis of the right external rectus, so slight that it was evidenced only by diplopia; (2) a very slight amount of paresis of the right orbicularis; and (3) a partial paralysis of the soft palate. To attempt to localise a tumour from these symptoms, I conceive, would end only in chaos. We must then fall back on the aphasic symptom, and on that alone. The aphasia I have mentioned was not complete. It was distinctly of the amnesic variety. Its incomplete nature was such that, taken with the evident symptoms of severe cerebral pressure, it had little value as a localising symptom. It could easily be accounted for by simple communicated pressure. But, even if had been more pronounced and better marked, where would it have indicated the lesion to be situated? Certainly not in Broca's space. See what Dr. Ross says in his "Treatise on Diseases of the Nervous System," Second Edition, Vol. II., p. 552:—"In amnesic aphasia the lesion is localised in the area of distribution of the posterior and terminal branches of the left middle cerebral artery, and the region of softening comprises the supra-marginal and postero-parietal lobules, the angular gyrus (visual centre), the posterior part of the infra-marginal convolution (acoustic centre), and the convolutions bounding the parallel and collateral fissures."

The region here indicated is situated above the cavity formed by the cyst in the temporo-sphenoidal lobe, and had trephining been performed, this region would have been the more rational one to have adopted instead of over Broca's space.

In corroboration of the fact, generally recognised, that tumours or lesions in the temporo-sphenoidal lobe afford few indications during life by means of which the disease can be located, I may mention a case, reported by Dr. Glynn and referred to by Dr. Ross,[a] in which the *post mortem* revealed a circumscribed abscess in the temporo-sphenoidal lobe. In this case the localising symptoms were caused by pressure on the cranial nerves at the base of the skull, and the case is particularly interesting in this connection, as it exhibited a train of symptoms totally unlike those exhibited by the case which I have brought before you.

Before bringing this paper to a close I would call attention to the nature of the cyst, which was found to occupy the posterior portion of the temporo-sphenoidal lobe. It was about two inches in diameter, and contained clear serum. There was no true cyst-wall. It was surrounded by softening brain tissue. There was nothing

[a] Op. cit. Vol. II. P. 534.

whatever in connection with it to suggest an abscess. There were no evidences of blood-clot or of inflammation. The microscopic appearances corroborated the clinical history that its origin was non-inflammatory.

I am not prepared to hazard an opinion as to its true nature. Perhaps some of the members of the Academy may be able to throw some light upon the question. Judging by the condition of the brain tissue around, it would seem as if some slow process of disintegration were going on, and that to this gradual process of destruction or softening of the brain tissue round the cavity the fatal result was due, more than to the pressure of fluid within the cavity.

Another question which arises is whether evacuation of the fluid would have arrested this process. Supposing that the skull had been trephined directly over this cyst, and the intervening healthy brain tissue had been incised and the cavity emptied, no doubt the symptoms of brain pressure would have been relieved; but would the disease have been arrested and the case cured? I think it is too much to assume that such would have been the case.

There is one other matter I would wish to call attention to—namely, the condition of the patient on Oct. 9th, when an operation was advised. *Absolute* coma set in on the evening of October 5th, and persisted till death. The pulse began to rise on the evening of the 6th, and rose steadily until, on the evening of the 8th, it was considerably over 100, and on the 9th, at 10 p.m., it marked 150. An operation was clearly out of the question on that evening—and as her condition then was the same as on the previous evening, except for an increase of about 30 in the pulse rate, it is inconceivable how at 2 o'clock p.m. on that day her condition could have been such as to have rendered an operation justifiable.

I am aware that it is not always expedient to bring the details of a private case before a public meeting of scientific men, but it is not by any means unusual. Circumstances determine the expediency, and in the present instance I believe I am amply justified in the course I have adopted.

The case can scarcely be now called a private one, since the lay public have been instructed on the points at issue, and the details are already sufficiently widely known. This form of publicity I cannot commend, but I have no hesitation in laying the facts before my professional brethren and asking for their judgment upon the whole case.

Art. VI.—*Case of Lymphadenoma.*[a]

By William M. A. Wright, B.A., M.D., Univ. Dubl.; L.K.Q.C.P.

Lymphadenoma is one of those rare diseases of childhood which only occasionally come under the notice of the practitioner in this country, and as during the past summer I had a case of it under my care which presented some special points of interest, I thought it might be worthy of bringing under the notice of the Medical Section of this Academy.

Case.—On the 26th of April, 1887, I was asked to see Alice F., aged twelve years and four months, of whom I was given the following history:—She was the child of healthy country people, her father being a middle-aged man, her mother a young woman. There was no instance of hereditary disease on her father's side, but there had been one case of consumption in her mother's family.

Her father died when she was about five years old, after a long illness, beginning as a swelled leg, which gradually grew worse, and was very painful; then was lanced by the medical man in attendance. Shortly afterwards, the dressings getting displaced, hæmorrhage began, which was not noticed for some time, and he died from loss of blood. He had suffered occasionally from gout. The child's mother is still alive and healthy. After the death of her father, Alice and her sister lived with various friends until January, 1886, when they were admitted into an orphan asylum in the neighbourhood of this city, where the sister still remains strong and healthy.

Up to December of last year Alice was a fine, strong, rosy child, who had safely passed through severe attacks of measles and whooping-cough; but in March of this year a lady who took a great interest in her, hearing that she was not at all well, went to see her and found her looking very ill, suffering from enlarged glands in her neck and a severe cough. In the beginning of April (the 6th), as she was nothing better but rather worse, her friend moved her to her own house in Dalkey, thinking that a change, with good food and nursing, would soon make her well. On bringing her home Alice went early to bed and slept all that evening and night, all the next day and all the following night, only rousing when awakened for food, and at once falling asleep again. On the second day she was up for five hours, but was very glad to get back to bed and immediately fell asleep. At this time the glands of her neck were greatly swelled. After a few days her cough, which had been very troublesome, got quite well, her appetite began to be fairly good, and she enjoyed her food.

[a] Read before the Medical Section of the Royal Academy of Medicine in Ireland on Friday, November 18, 1887. [For the discussion on this paper see the Number of the Journal for January, page 81.]

April 10th she spent in bed sleeping all day, but on the 11th was again up for five hours.

On the 26th I saw her for the first time. She was lying in bed, and appeared a bright, intelligent child, with dark blue eyes and very long brown lashes. On either cheek was a bright malar flush, but the rest of her face, her lips, gums, and conjunctivæ, were markedly anæmic. When spoken to she answered in a low whisper, and on inquiry I ascertained this was the only way she had used her voice since her illness began. At my request, and by visibly making an effort, she spoke a few words in an ordinary tone. On examination I found all the glands on both sides of her neck very much enlarged and indurated, the glands in the anterior triangle being much larger than those in the posterior and fused into a nodular mass.

In the thorax, the axillary glands on both sides were somewhat enlarged, but none felt bigger than a large hazel nut. Lungs and heart both appeared sound. The inguinal glands of both sides were also slightly enlarged, and were tender to the touch, in which particular they differed from both the cervical and axillary. The abdomen was neither full nor retracted, but a peculiar feeling of dry roughness of the skin was noticeable all over it. No enlarged mesenteric glands could be made out, nor was there any abdominal tenderness. There was slight increase of splenic dulness, but the edge of the spleen could not be felt below the ribs. There was no increase in the size of the liver. The tongue was clean, but very red, with enlarged papillæ visible all over it. The pulse was 110 and the temperature 103° F. There had been diarrhœa for four weeks before my visit, and the drowsiness referred to before still continued, but was not nearly so remarkable as at first. I regret to say that a microscopic examination of her blood was never made.

April 28th.—I again saw her. She was worse, suffering more severely from diarrhœa. Pulse 120, temperature 102·5°.

May 1st.—Diarrhœa better, but temperature still high—103°—and pulse 120.

May 4th.—Alice much better; voice stronger; diarrhœa checked; temperature 101°; pulse 100.

May 11th.—On visiting her I found that since last seeing her she had been going on apparently well, remaining up for two or three hours daily, most of which time was spent in the open air, but her pulse was 120 and her temperature 102°. On examining her I noticed a discoloration of the skin on the side of the neck, just above the clavicles, which I at first thought was dirt, but a further investigation soon satisfied me that it was due to brown pigmentary staining; the same coloration was also visible in the skin covering the axillary border of the great pectoral muscle, and on the front of the abdomen just over Poupart's ligament on either side.

May 20th.—Temperature 102·4°, pulse 115. The glandular enlargements were not greater than a month before, nor did her strength appear much impaired, but the pigmentary staining had greatly extended and become much darker. In the neck it reached on either side nearly as high as the ears. From the axillary margin it went down the arm, fading away about the insertion of the deltoid; it extended as high as the clavicle, and went half way across the chest in front. The whole skin over the abdomen was pale brown, the colour deepening into a dark brown over Poupart's ligament. On either arm, between the insertion of the deltoid and the elbow, were seen a few scattered patches, but there was no staining on forearms or hands. On the legs there was distinct bronzing over the patellar ligaments, and on either side of the patellæ, but no discoloration elsewhere except a few small patches in the outer and upper surfaces of the thighs, about the size of three-penny pieces, similar to the spots on the arm.

There was not at any time the slightest trace of pigmentation on face, hands, or feet, or on any part of the mucous membrane of the mouth. At this time the peculiar dryness of the skin was very noticeable.

June 1st.—Saw her again, the pyrexia still marked; the area of pigmentation had not extended, but the colour had deepened. She was now beginning to lose flesh and strength.

On June 8th my friend Dr. Graves saw the case with me. Her condition was unaltered from my previous visit, but from this date she gradually grew weaker, her appetite failed very much, and she began to complain occasionally of a pain in her right side, and some nights she coughed a good deal.

On June 30th I carefully examined her chest, but detected no physical signs save a few mucous râles at both bases. After the most careful percussion I failed to find any evidence of enlarged mediastinal or bronchial glands.

All through July she slowly got worse, her temperature never falling below 102°, or her pulse below 120, but the pigmented surface did not grow larger nor did the colour darken, nor was there any increase in the size of the various glands. Early in August she began to suffer much from headache and pain in the left ear; and on the 6th a very fœtid watery discharge commenced to flow from it; and her friends noticed that, after some days, the glands under that ear appeared to diminish in size. From the 8th to the 10th of August the pain in the head was intense, but by the 11th she had fallen into a drowsy semi-comatose condition, in which she continued until her death, which occurred on the afternoon of the 16th of August. For ten or twelve hours before death her breathing exhibited the Cheyne-Stokes rhythm. Thus sadly terminated an illness lasting about seven months from the first appearance of any symptoms. No autopsy was allowed.

Remarks.—First, as to the diagnosis. Commencing with enlargement of the cervical glands, and some slight failure of health, one can readily understand its being considered merely an ordinary case of scrofula in the institution where the child first became ill, but when she came under my care the gravity of the case was plain from the pyrexia, prostration, and anæmia.

On examination I excluded leukhæmia for the following reasons:—

1. The enlargement of the cervical glands was the first symptom noticed.

2. There was only a very slight increase in the size of the spleen; no enlargement of the liver; no fulness or tenderness of the abdomen.

3. There was no history of any ecchymoses or of any bleeding from any part of the body (nor was there any sign of either in the subsequent progress of the case).

After some consideration I was satisfied that I had to deal with the disease known as lymphadenoma.

That there was some increase in the number of the white corpuscles is very probable, such generally occurring in these cases.

Next, as to the symptoms and physical signs, the first thing worthy of note was the character of the cervical glands; they formed a complete chain from ear to ear, passing under the chin; they were nodulated, and inseparably fused with each other, but the skin was movable over them; they were very hard—a point in which true lymphadenoma differs from the so-called lymphatic leukhæmia in which the affected glands are generally soft and elastic. The post-cervical and the other enlarged glands also remained hard and freely movable.

At no time was the *anæmia* very profound; there was always a tinge of colour in the conjunctivæ of the lower lids and in the mucous membrane of the gums, though on looking at the child in bed the most noticeable thing was the contrast between her dark eyes, her bright malar flush (which continued almost to the very end), and the extreme pallor of the rest of her face and lips. The great *drowsiness* and the *disinclination to use her voice*—symptoms which she never lost, are described by Dr. Eustace Smith as very characteristic of the cachectic stage of this disease; so also was the peculiar dry rough feel, with powdery desquamation of the skin covering the abdomen, to which I referred in my notes.

The diarrhœa, the cough, and the physical signs in the lungs

were probably due to some enlargement of the mesenteric and mediastinal glands respectively. But the most interesting symptom of all was the localised bronzing of the skin, which first showed about three months after the illness began, gradually increased in intensity for six weeks, and then remained stationary until the fatal termination of the case; the pigmentation was almost altogether confined to the neck and trunk, and never appeared on the face, any part of the mucous membrane of the mouth, or on the hands or feet. I have searched through such records as the limited time at my disposal permitted without being able to find any account of a similar case. I presume the cause of the staining must have been the extension of the disease to the suprarenal capsules—a complication which, in a child of twelve and a half years, appears to be very rare.

A word as to the treatment, in conclusion. I got her to take as much nourishing food as possible. I treated symptoms as they arose. I tried iron, iodide of potassium, cod-liver oil, and lastly, on two occasions, I pushed arsenic until constitutional symptoms (the chief being intense inflammation of the mucous membrane of the nose) warned me to stay my hand for a time. These symptoms came on only after she had taken the first time 10 ms. of liq. arsenicalis three times daily for three weeks, and the second time the same dose for a fortnight. I did not try phosphorus; but no treatment seemed to have any favourable effect on the case.

Art. VII.—*Our Hospitals and the Interests of Patients and Pupils.*[a]

By E. D. Mapother, M.D., President, &c., &c.

During the past year our Branch has been moved towards the provision in Dublin of proper opportunities for pathological study, and a Bluebook of extreme value, touching the curative and educational facilities of our hospitals, has been presented. On these topics I propose to briefly comment, being, of course, solely responsible for any suggestions offered. The financial points, and the modes of government and of election of officers, will not be dealt with, having regard for your patience and my own unfitness.

The teaching of pathology, macroscopic and microscopic, is at a low ebb in Dublin, a city in which an active society originated an interest in the former. The number of hospitals, general

[a] An Address at the Annual Meeting of the Dublin Branch of the British Medical Association, January 25, 1888.

and special, will bar all progress unless consolidation or, at least, association is brought about. The physicians and surgeons cannot, and I fear their pupil-assistants will not, give time to a full examination of all the organs, and the decent re-arrangement of the cadaver. The proceedings will occupy from one to two hours, even when, after removal of the viscera, the spinal cord is taken by cutting the bodies of the vertebræ from the pedicles by chisels, spurred for each side—a quick way I lately saw worked in Vienna. It is usually thought better that the officers of lying-in hospitals should not undertake *post-mortem* examinations. In each of the ten general and six special hospitals there could not be a teacher of pathology. It seems to me that the two great bodies in Dublin, which alone have pathological museums, should found chairs. In one there is a great teacher of the most cognate subject, whose competency is unquestionable, and who might find time—in the other there is an officer of good promise; but teaching has been forbidden, although a hundred years ago the system of demonstrating such specimens was there in vogue. The stipends should come from the Conjoint Bodies and the University, on condition of free admission to all candidates who had passed the first half of their examinations, and from the usual school fees from others. The physicians and surgeons would give notice of any case desirable for examination, and of course they will rejoice to have their diagnosis tested by a pathologist who only sees the specimens. The rough duty should be done by trained workmen who would bring the valuable parts for full examination and preservation to those colleges respectively.

As such specimens would be varied and irregularly supplied, it is only in these museums that systematic courses could be given. A line drawn N.W. to S.E. from the Midland Bridge, North Circular-road, to Leeson-street Bridge, fairly bisects the city. The hospitals which might thus group with Trinity College would be the Mater, Rotunda, Jervis-street, Sir Patrick Dun's, Baggot-street, St. Joseph's, the Adelaide, and Mercer's; and with the College of Surgeons, the Richmond, Steevens', Coombe, Meath, Cork-street, and St. Vincent's, each group containing about 550 beds occupied, but let the selection be by fitness, affection, or in any other way. The pupils of each hospital would attend the autopsies in it, but only those franked by the colleges or by the special fee would be present in the museums at the systematic courses, including pathological histology.

As children's bodies are not procured as dissecting subjects, examinations of them in some of these dead-houses would supply a want in anatomical science. Hereafter changes in the Royal University might demand readjustment of the project.

It could not be contended that in three of the schools of Dublin, as at present constituted, a full course of pathology could be delivered, or that the teacher could be fairly paid for exhaustive labour in this most expanding of our sciences. The same being true of many other subjects, especially the purely scientific ones, wherefrom the stipend cannot exceed £100 a year, so that earnest and original work cannot be hoped for, is it not time that individual interests and sentiments should be merged towards an amalgamation of schools? Amongst other great things then attainable would be the establishment of a residential hall. However, these topics are to be discussed in a practical way elsewhere.

Post graduate courses have long been popular in America and on the Continent; for instance, 300 often attend the Polyclinic in New York. In the great hospitals of that city the ordinary clinics are very thinly attended—examination instead of education being in view—and the better class, after passing, either work in their own hospitals or come to Europe to adapt themselves for immediate scientific practice; but some may trespass on the public field without fitness.

Our licensing bodies could encourage clinical and pathological work by setting those studies alone for the final year's examinations; but do our hospitals give opportunities? If an officer of a few years' standing in the army, navy, or dispensary services hopes to refresh or to mark his fitness by passing for the Fellowship of the Royal College of Surgeons, he can in Dublin efficiently study the diseases of the eye, of the female organs, and of children; but in the present subdivided way, groups of diseases of skin, heart, lungs, joints, digestive and urinary organs, could not be presented in number and variety for the three or four weeks' course which the practitioner could attend. Several hospitals could unite in giving instruction for a common fee. The Fellowship examinations will now be held at three stated periods, and the courses might be fixed accordingly. In London and in English provincial towns—Leeds, for example—large hospitals have afforded these opportunities.

In Dublin it would seem that, with an examination ahead, none but the old lines will be voluntarily followed. For a fee of five shillings third and fourth-year students can attend the splendidly

instructive meetings of the Royal Academy of Medicine—a privilege unknown elsewhere—but of some 600 students who could do so, six only have entered this year. Attendance should be made compulsory for fourth-year students, if pathological courses cannot be arranged.

In the winters of 1852-3 such masters as Crampton, Corrigan, Stokes, O'Ferrall, Mayne, R. W. Smith, Adams (omitting the living), taught pupils of my day in the Pathological Society, and, besides the knowledge we could imbibe, they filled us with pride that our country had such grand exponents of medical science.

As a sanitarian, twenty years ago, in my "Lectures on Public Health," and in my "Carmichael Essay," I urged that fever wards, or even adjoining buildings, should not be connected with general hospitals; otherwise, despite all efforts, infection will be spread by nurses or students. Still less should they be parts of our workhouse hospitals. I never tire in quoting Corrigan's axiom, laid down in 1846, regarding this point—"Sickness should not be made a chain to drag a man into a poorhouse." Convalesence from fever being slow, such patients would be necessarily associated with paupers. Cork-street hospital, come the money whence it may, must be supported as a well-sited and admirably worked institution, having separate buildings, all extensible for epidemic pressure of any variety. It largely serves the adjoining townships, Rathmines and Kilmainham. So also is the Hardwicke needed for the north half of the city and suburbs. Its site is very good, sufficiently isolated from the union buildings and from houses. If there was not accommodation enough on the north, the south side would have to bear the expense of its patients, which is plainly unjust to the taxpayers there.

But surely there is wanted for the east, and for the Pembroke Township, a fever hospital. If Sir Patrick Dun's be not fully available and a new site be wanted, the waste ground on the Pigeon-house-road, either east or west of the Coastguard Station would suit; and so infectious cases—smallpox and cholera especially—reaching us by sea could be easily intercepted. The new road, running from near Irishtown Church, makes the place easy of access, and after disinfection there is a safe outlet for the excreta by the main of the Rathmines and Pembroke Townships, to near Dublin Bar.

The two late smallpox warnings—for happily they were no more—give some hints of value. On August 20th, 1887, a Dublin shopman

stayed with an officer of an institution in Ulster who had visited a smallpox patient, he being safe, so that our citizen suffered through a middle person. He lay ill for five days, and on the 1st of September, when the rash had been three days very largely out, was admitted to the Hardwicke. Vaccination and very complete isolation of the eight inmates of his house, burning of their clothes and bedding were instantly carried out, and thence no other case has arisen.

In October a foreign sailor, with some unrecognised rash, lodged in Grant's-row, and the illness of an unvaccinated child was afterwards concealed for days. On the 26th she was removed to Cork-street Hospital to die, that being the only fatal case. From this focus nine cases were traced. One came to hospital well smeared with sulphur ointment. Oh, for the diffusion of dermatological knowledge!

The only case arising far off was that of a lad who sent his washing to that district, and he produced the disease in Portobello. After seven weeks freedom a child with the disease was unnotified from this district, and up to the present five cases are traceable to this nest. Smallpox being palpably enthetic, and cholera being as clearly importable, any person—peer or pauper—suffering therefrom, should be forced to go to hospital if he happened to be one of the first ten cases after an absence of the contagion for three months. So many foci would have been then set up, and the preventive steps would be so expensive—for instance, £20 was demanded for loss of clothes by one of the recent patients—that the ordinary steps for stemming epidemics must suffice.

After many years of freedom some imported cases were, in 1872, concealed in Malpas-street, and thence arose an outbreak—the word epidemic has no meaning here, if, indeed, it has anywhere—and over 20,000 cases were recorded for Ireland. In 1885 a case taken into a General Hospital, Montreal, infected many patients; by them outside it spread, 3,000 deaths occurring in a few months. We are not sure that other zymotics may not in like way be scattered.

In Cheltenham all classes submit to isolation in hospital, and thanks to this, after six separate introductions of the disease, it has never gained a footing.

Some of our hospitals which admit other zymotics refuse smallpox, as it has nearly always burst the bounds.

The Public Health Act, 1878 (sect. 141) authorises the removal of an infectious case improperly lodged to hospital, but does not enforce its retention there. However, any unsafe patient leaving

could be punished under the next section, or arrested for larceny of hospital clothing, if such had been supplied.

An hospital for treating children with infectious diseases is most desirable, but Dr. Gairdner, our President-Elect, reported in 1864—being then Medical Officer of Health for Glasgow—as to the difficulties in its way:—

"As a general rule, the habits and traditions of the family life, even in the most poverty-stricken and degraded classes, oppose an insuperable barrier to the removal of very young children; nor, even if the consent of parents could be obtained, are the means of treatment in hospitals adapted to such cases. It is, therefore, with a feeling of complete helplessness that the sanitary officer sees such diseases as measles, whooping-cough, and scarlet fever, running riot in the houses of the poor; he feels that in most instances nothing can be done beyond a general instruction to open the windows, and attend, if possible, to cleanliness. In some instances he is paralysed in the face of greater emergencies; he has no power to enforce removal, even should an infected family settle in a crowded neighbourhood hitherto free from disease; he cannot disperse a school in which cases of infection have occurred, and any attempt even to give publicity would only result in their more careful concealment. Even as has repeatedly happened within our observation, provisions are publicly sold from infected apartments. In one instance a woman with the eruption of smallpox actually on her hands, was found selling sweetmeats to the children of a school in her neighbourhood. In this instance a threat, partly of exposure and partly of legal consequences, put an end to the scandal; but legal remedies can have a very limited application, and self-interest will often be much too strong for all suggestions proceeding merely on public grounds. In truth, the spread of epidemic disease among children can hardly be met otherwise than by the gradual diffusion of enlightenment, and by the improved habits which may arise from the re-modelling of the dwellings of the poor over a long course of years."

Every general hospital should have observation wards in which cases indefinable for two or three days could be lodged, and there the students would learn much, but only in great special hospitals would they see enough of all infective maladies. Let us, however, restrict the attendance at fever hospitals to third or fourth year men. Fresh country youths take infection most readily, and cannot profit in exchange for the risk. When they have worked at such subjects

as the non-infective lesions within the thorax and abdomen, the ordinary rashes, the treatment of bed-sores, distended bladder, and the like, in three months, or at most six months, they should acquire the power of applying such information in the fever hospital, where such complications arise. An equal period usually suffices for the gain of ophthalmic and aural, and of obstetric knowledge. The fee should be subtracted from that of the general hospital, and on hygienic grounds the fever months should never tally with those of work at midwifery. Kept at fever alone, students will master the subject in a few months, but reaching the hospital after earnest work at a general hospital for a couple of hours their receptivity of learning would be very much less.

In this country fevers are fortunately becoming less endemic, and our graduates who go abroad will have to learn, what they could not study here, of other localised pests.

The hospital which Surgeon George Doyle founded in 1755—the Lock—was the most difficult which the Commissioners had to deal with. However, every benevolent citizen will feel that such a separate refuge must exist, as it would be grossly wrong to mix the fallen with the virtuous poor, and to put them into separate wards would be equal to branding them with "the scarlet letter." The dress and manner of their female visitors, decently as they might strive to act, must be objectionable. There should be power to keep these patients till cured, or at least contagionless, provided they had signed on entering an agreement analogous to that by which the drunkard can imprison himself for twelve months.

But surely the cases in the Lock can be studied by senior students, or at least by post-graduates, without fear of moral contagion. In other hospitals venereal diseases, except those in the female genitals, can be freely seen, and there can be no objection to carry suitable patients, with faces fully veiled, to the theatre, the students alone having access there. The small fee which should be charged should be allowed in the total expense of hospital education. If surgeons are not taught the mode of recognising chancres in females who subsequently become mothers, racial degeneration must ensue, and wrong diagnoses in family practice may ruin many a household.

Two facts point towards a change to be wished for as regards the Eye and Ear Hospitals, and against their specialisation; they are but 370 yards from each other, and four of their six officers teach in general hospitals. In two other hospitals there are ophthalmic

surgeons, so that in Dublin we have eight eye clinics. What can be the objection to attach all their strength in the latter places consolidated, as vastly more available to patients and pupils, all appliances being, of course, fully provided in place of those generously supplied in the present special institution.

Again, is it not regrettable that so many orthopædic cases are diverted from the general hospitals, where students could profit by them, to the one special institution; the more so as the specialist there would be so remarkable a gain to the staff of any large hospital which established such a department.

Since Evory Kennedy's great paper in 1869, with a most exhaustive debate for seven nights, I have felt that lying-in hospitals ought to be limited to cases in which difficulties had been foreseen, or in which very special circumstances compelled the removal of the expectant mothers. In the normal state of any community, surely the home, be it ever so humble, is the fit place for the function of childbirth; affectionate aid is assured for the mother, and she is able soon to direct at least the care of the household. Removed from it, her anxieties must tell against her well-doing. When Mosse founded the most famous lying-in hospital in the world, the rooms of the poor were so filthy and crowded that removal of the parturient was necesssary. Whitelaw's Survey, in 1798, showed great density of population—for instance, in St. Luke's Parish, 15·95 per house; in St. Michan's, 12·56; and in Plunkett-street, over 28. Half a century before, when Mosse began his enterprise, the population was, it is believed, 200,000, in fewer houses. Now our working-class are better housed, and every year improvement goes on; so that we hope for better things, even in this poor-laden town. Take the cases of the two healthiest English towns—in the lying-in hospital of Brighton, with about 120,000 inhabitants, twenty-five deliveries yearly take place, and in Hastings, with 60,000 people, there is no such institution at all. I do not urge the crippling of such great hospitals as the Rotunda or Coombe, but that they should tend toward spreading their functions as hospitals for diseases of women, and by their maternities succouring those who lie-in at home by the best medical and nursing skill, and by food and clothing. The Bill of last session would disendow them unless they had at once 80, and after five years, 100 occupied beds, although the Commissioners waived that point in their favour.

In 1854 the Master of the Rotunda, at the House of Commons' Committee, was asked—"Do you afford any external relief to

lying-in women"? He replied—"Not ordinarily; in an extreme case, if they send to the hospital for assistance, we send one of the senior pupils or assistants."

Since then changes have gradually tended towards using hospitals for the troubles of parturitive science. Is not the adjective just used better than that perversely derived word "obstetric"?

I still warmly favour the plan which Earl Spencer conceived, and which mainly moved him in appointing the Commission—namely, the abolition of the Richmond Hospitals (a title far better than their usual inclusive appellation or separate names), and of Steevens' Hospital, and the erection of a new medico-chirurgical building, Cork-street to be the Fever Hospital in connection. Some degree of unfitness of the Richmond surgical block, and the sites of all on the edges of the city remote from medical schools, were good reasons for the change. A site near Christ Church has been proposed, and Steevens' would be 1,370, and the Richmond 900, yards distant therefrom. A large, cheaply available space in and about Meath Market, Thomas-street, would give a healthier site, more convenient to the terminus, the great breweries, distilleries, and barracks, and the Kilmainham Township. Even greater advantages would result by the clearance of ruinous tenements. The Richmond, Steevens', and Cork-street Hospitals would be respectively 1,150, 840, and 660 yards distant.

This Western Hospital, as it might be named, could be built on the most modern hygienic principles without extravagance, and the sums got by the sale of the Richmond and Whitworth (that the North Union wants these premises is only an enhancement of their value), and Steevens' would go a good way. The great manufacturers and merchants who abound in the district would be generous towards a building fund. For maintenance, surely institutions which for over a third of a century have been well earning half the Government grant, would be still worthy a large share, and the properties of Dr. Steevens and Edward Cusack (the larger donor, whose name is so usually ignored), although now depressed, are of considerable value. The financial fact just stated appeals against any sentimental objection to the abolition of a name. In olden times the remoteness of Steevens', although its teachers were illustrious, kept away a class except that resident—now the staff is strong and progressive, but their energies are wasted for want of learners.

If there was any hospital at all contiguous in which the governors and officers (if these designations were there separable) did not form

a happy family, perhaps an adroit peacemaker might bring about a union more or less complete. No hospital should be "an incompatible," to use a pharmacist's expression.

In contrast to the medical staff domination just hinted at, stand out the charters of Sir P. Dun's and Jervis-street, which exclude the medical officers from their committees.

If the fusion of the Richmond Hospitals and Steevens' be not favoured, surely the former tried friend of the poor need not be wiped out because the adjoining workhouse covets its premises. Rather let the Guardians send their serious acute medical and surgical cases on fair payment, as at present they do their fever patients; the pauperising point would not arise, as State funds would be still available, or let them buy one or two of the buildings, when the remaining could be converted into an improved medico-chirurgical hospital. The facilities for taking grounds for hospitals should be at least equal to those under Railway Acts, and thereby the persistently noxious dairy yards in front of the Whitworth Hospital would be cleared.

If the Richmond Hospitals be abolished or consolidated in the south-west, north Dublin could be hospitalled by the Mater Misericordiæ, of great available capacity, and by Jervis-street Hospital, also of great capacity. They are 1,370 yards asunder, and they are distant from the Richmond 1,150 and 800 yards respectively. Then as a North Fever Hospital, the Hardwicke or the Whitworth (which slight changes would make a more suitable building) should be maintained. It would serve for the classes of the Mater and Jervis-street, and fever might be excluded from the former. The Sisters of Mercy nurse these hospitals and those of the North Union, and we may feel sure that these devoted ladies would gladly extend their ministrations to the adjoining fever hospital, funds for the patients' support being derived from the State, the Corporation, or the North Dublin Union, or all proportionately.

Both the Commissioners and the framers of the Bill of last Session propose to deal justly with the officers of the Richmond Hospitals, and doubtless the Treasury will do so if a Government Bill be introduced. To deprive these eminent physicians and surgeons of their clinical facilities would be somewhat like closing law courts to some leading Queen's Counsel, and our brethren should get as ample compensation as the latter assuredly would in a like case. The agitation for change during the past three years has, of course, lessened the classes, and the suspense has injured the interests of the officers.

On the south side two institutions, which are but 700 yards asunder, showed symptoms of conjunction—Sir P. Dun's and the City of Dublin. To avoid costly building, surely they could join their classes and keep one hospital for surgical, the other for medical cases. Or let Baggot-street be enlarged to accommodate both these classes, and let Sir P. Dun's be the great Eastern Fever Hospital. If, as urged, infectious cases be treated apart, poor patients thus afflicted should not be carried to the Hardwicke and Cork-street Hospitals, across two-thirds of the city from the eastern edge and the Pembroke District. Of course that wealthy township should be roused into greater generosity than appears in Dr. Haughton's justly indignant evidence.

The Meath Hospital is of good size, and is just completing considerable additions, and serves a most extensive area. If its fever cases, which mainly come from country districts, where they should be treated, were diverted to Cork-street, and the £600 a-year it has received for their treatment was applied to general cases, this old and famous clinical institution should be regarded as a large hospital.

Of St. Vincent's, with which I have been connected nearly thirty years, I will only say that, although it is large, as regards occupied beds and paying pupils, the managers desire to acquiesce in any conditions which may increase its usefulness to the sick poor, and to the cause of medical education. Its distances from neighbouring hospitals are—to Mercer's 740, to Meath 1,000 yards.

Hear a *précis* of South's separate Report, which has not been brought enough to the front, perhaps because two large hospitals had not been then founded, and others have been enlarged. He would lessen our general hospitals as follows:—North side—Move the hospital at Jervis-street eastward to a larger building on a better site, and leave the House of Industry for the north-west.

On the south side of the Liffey combine, as regards funds, management, and staff, Steevens' and Cork-street, the former as the surgical house, the latter as the medical and fever departments. Such would be the south-western hospital, and the south-eastern he would constitute of "Sir Patrick Dun's, the Meath, and Mercer's, or, in its stead, and united with it, the City of Dublin Hospital." The first to be the medical, the second the fever house, and the surgical building to be provided by the enlargement of Baggot-street buildings, that in Mercer-street being abandoned.

Mercer's and the Adelaide are within 340 yards of each other, and the latter is 500 yards from the Meath.

His views were, however, dominated by the erroneous idea of having the scientific medical schools necessarily combined with hospitals—a system not to be thought of here.

There is only one piece of evidence in the blue book to which strong language might be applied. It is as follows:—

"The police have instructions to bring all cases (accidents) occurring on the south side of the city to (blank hospital), except those occurring near the steps of another hospital, and to (blank hospital) on the north side of the city."

The instructions always have been to bring accidents and other cases wanting prompt relief to the nearest hospital.

It may be well to state very briefly some of the advantages which would follow the reduction, say by half, of the general hospitals, by consolidation or otherwise:—

Clinical positions are too numerous—25 physiciancies, 38 surgeoncies—beds being, therefore, relatively too few. Mr. Thomson's evidence on this point is exhaustive. With wider fields greater additions would be made to medical knowledge. Although Dublin has done her duty in the training of practitioners, her original observers and positive additions to science might have been more numerous. Thus may be partly explained the striking fact that not one Dublin practitioner holds a British or foreign honorary degree. Last year alone our licensing bodies conferred 33 upon strangers. Such distinctions here would tend towards checking party and personal favouritism, which is extinguishing the ambition of honest scientific workers. In England, and still more, on the Continent, every year, hospital and Governmental medical posts are becoming more assured as the rewards of special fitness.

A large hospital could afford a resident physician and a resident surgeon, either to be present at all hours to instantaneously meet emergencies.

If in an enlarged institution the class becomes unwieldy it could, and, indeed, in any case should, be divided amongst different teachers, according to the four years' curriculum now definitely settled.

Some patients are over-treated, or often-treated, as they have so many hospitals or dispensaries close-by and free, and are trained to become the veriest hypochondriacal bores.

Amalgamation will be justly brought about if the general hospitals must show, seven years hence, a minimum of 150 occupied beds. It is always well to quote points which may be

cited against as well as for an argument. On November 4, 1811, the College of Surgeons decided not to recognise any hospital which had less than 20 beds. How grateful should the poor patients and pupils of Dublin be that they do not live under the system of "the good old times." The application for recognition was from a building in Peter-street with 12 beds, the property of the surgeon.

It is clearly just that the Corporation grants, reaching £5,000 a year, should be in favour of citizens only, and that other authorities, townships, Poor-law guardians, and the like, should contribute to the support of patients from a distance. This is already done with us in the Ophthalmic Hospitals, and in the case of a few fever patients, and the principle is universal in Continental Hospitals.

If the hospitals be governed by a Board for the allotment of the public funds, the Continental system of a central bureau, whence applicants would be drafted to the several institutions, seems inadvisable, as the poor as well as the rich should have power to seek advice from any physician or surgeon whose fame had attracted them. Our city is too small to need such a system.

That Dublin has a right to the grant every one of the State Reports show, especially for the support of the education of public medical officers; that it has a need for it was most forcibly expressed by the House of Commons Committee (numbering fifteen), in 1854:—"It is a metropolis for the poor, but not for the rich. The value of its property has within the last fourteen years decreased, while local taxation, population, and pauperism, have increased." How sadly intensified does the statement apply to-day, the only statistical fact changed—smaller population—telling for the argument—year by year our higher class go, the poorer crowd in.

All the suggestions in this address are made with due humility when so great a topic has to be faced, and if any one of them shall prove of value it will not have been written in vain. Incidentally, approval of the Report of the Commissioners has been noted, but it is right to say that this blue book, unanimously signed, is, from that astounding circumstance, and its own merits, a gem.

ART. VIII.—*Enterectomy and Enterorrhaphy.* By J. S. M'ARDLE, F.R.C.S.I.; Surgeon to, and Lecturer on Surgery at, St. Vincent's Hospital, Dublin.

[*Concluded from page 13.*]

WHEN we collect and review the cases of enterorrhaphy for perforating wounds of the abdomen implicating the intestine and necessitating this procedure, we find that this department of surgery is keeping pace with the rapid advance which is now being made in the operative treatment of intraperitoneal disease. Few cases of intestinal suture for perforating wounds are on record. Forty would more than cover all the recorded cases, and after eliminating doubtful ones there are 34 authenticated instances of this operation; and of these by far the greater number have been carried out during the past *three* years—8 in 1885, with 4 recoveries; 14 in 1886, with 3 recoveries; and up to this date in 1887, 7 cases, with 1 recovery. Of the remaining cases operated on, 3 recovered—1 in 1836, 1 in 1848, and a third in 1884. That gives a success of almost 1 in 3, and this, when compared with the results of the pre-Listerian age, is most encouraging. It must be remembered that many of the recorded cases were conducted under difficulties, and most of them, when undertaken, were unpromising. I have no doubt but that a more perfect knowledge of the application of the intestinal suture, and a better acquaintance with the circumstances under which the operation should be attempted, will reduce very much the mortality attending severe abdominal injuries.

Of enterorrhaphy for rupture of the intestine occurring without perforation of the abdominal wall, we know little. As yet only 8 instances of laparotomy and suture for such injury are recorded. Of these 2 died within two hours; 2 in six hours; 1 in twenty-six hours. In the sixth, the time of death is not stated, while the other 2 recovered from the operation. Of the cases of recovery above mentioned, one was an example of the first stage of treatment of such injuries—that is, laparotomy and the formation of an artificial anus; the patient did well, and in four weeks afterwards resection was performed; but the patient died in twenty-six hours;[a] death in this case seemed to result from exhaustion due to the prolonged operation. The state of things revealed by the *post mortem* resembled the condition found after death in a case of

[a] Croft, Brit. Med. Jour., I., p. 975.

mine, in which the operation of pylorectomy lasted two and a half hours. Where, as in Mr. Croft's case, exhaustion is present, the operation, if lasting more than one hour and a half, can hardly be successful. Such at all events is the experience derived from a study of resection of the pylorus. The second instance of what may be claimed as a recovery is the one recorded by M. Bouilly.[a] A man, aged twenty-nine years, was kicked in the abdomen by a horse, on the 11th of June, 1883. He came immediately under M. Bouilly's care, and on the 12th, symptoms of intestinal rupture arising, laparotomy was performed. Five inches of the small intestine were resected, and Lembert's suture was applied—silk, No. 0, being used; a large drainage tube was passed into the pelvis, and the abdominal wound was sutured with silver wire. On the third day an evacuation of the bowels occurred, but some fæces also passed through the wound in the abdomen, and from this date a fistula discharging a considerable amount remained. On the tenth day after operation, M. Bouilly made a digital examination of the bowel above and below the fistula, in order to determine what steps would be necessary to restore the continuity of the bowel wall and the existence or absence of an eperon. In three hours after exploration severe shivering set in, then swelling of the abdomen and great pain, the temperature rising to 39° C. In twenty-four hours the patient died with symptoms of septic peritonitis, and the *post mortem* revealed a breaking down of adhesions which had joined the intestine to the abdominal wall.

In bringing this case before the Surgical Society of Paris, M. Bouilly very frankly admitted that the injury done during examination of the fistula caused death. In its absence the case would have recovered; and even as it is, it must be looked upon as a recovery from the operation, and, as such, must serve as a landmark in future efforts in a path hitherto apparently closed to surgical advance.

The above brief account of the operations performed up to this may appear discouraging; but when we remember, as is well said by Curtis, "that even a supposititious case of recovery after the accident is so rare as to be a surgical curiosity," we may congratulate ourselves on the recent advance in our art which enables us to save two in eight, when, as mentioned by Chavasse in his admirable paper, the expectant treatment at best did not offer a hope to more than two in fifty.

[a] Bulletin et Mém. de la Société de Chirurgie. 1883. P. 690.

In reference to the question of abdominal exploration for injured intestine, the conclusions arrived at by M. Bouilly are—1st. That examination of the abdomen for ruptured bowel is an authorised operation. 2nd. The minute dressing of a peritoneum, the subject of an inflammation resulting from stercoral discharge, may stop that trouble. 3rd. The greatest danger after resection and suture is the yielding of the sutures. 4th. All efforts should tend towards perfection in the suturing. 5th. Sutured portion should be left near abdominal wound. 6th. Patient should be nourished with extreme care. 7th. We may hope that experience of cases and perfection of methods will give complete success in traumatic cases when treated early. Verneuil, Després, and others, believe that an artificial anus should be formed, and later enterorrhaphy carried out. The second step should not be undertaken until after the lapse of at least a month, as the bowel will not sooner have returned to its normal state, and adhesions will be imperfect.

The foregoing pages fairly represent the work done in intestinal resection and suture up to this, and as much of the success of the operation depends on the carrying out of the details of the procedure properly, a brief review of the methods adopted by different operators may prove of use. The steps of the operation are—(*a*) abdominal incision, (*b*) clearing out of intestine, (*c*) section of bowel and mesentery, (*d*) intestinal suture, (*e*) cleansing of the peritoneum, and (*f*) closure of abdominal wound.

The incision which seems most advantageous is a central one below the umbilicus, or, if the cause of the operation exists in upper abdomen, one extending round umbilicus and upwards to ensiform cartilage. The advantage claimed for this incision is the readiness with which you can reach and deal with the mesentery. When the cause for operation is in either iliac fossa, as happened in my case, an oblique incision over the seat of disease affords easy access to the bowel and its mesentery. As most of the enterectomies performed up to this have been conducted for disease of the small intestine, the majority of operators have used the central incision below the umbilicus.

The clearing out of the intestine may seem a minor point in this complicated operation; but when we read of suture of intestine and its return into the abdomen loaded with fæcal matters, we are not astonished to find the patient die from peritonitis, the result of fæcal extravasation—and such is the history of many cases referred to in the foregoing pages. We are all anxious to prevent the

escape of the intestinal contents during the operation, when the danger of their so doing is easily provided against, and when the occurrence could be remedied by a thorough cleansing of the peritoneum; but, by leaving the bowel loaded, we expose the sutured surfaces to a strain which they frequently prove too delicate to bear, when peristalsis occurs as reaction is setting in, and thus render rupture likely when the intestine is not within our reach. If free purgation has been brought about previous to operation, and if for thirty-six hours the patient has had nothing by the mouth but a limited supply of liquid diet, the intestinal contents do not give much trouble; but when the operation is conducted for acute obstruction, injury, or a close stricture, one meets with above the point of resection a considerable amount of fæcal matter, which should, if possible, be removed before completing the section of the bowel. To prevent the escaping material contaminating the peritoneum, Madelung[a] advises the passage of strong suture through the lips of the abdominal incision, in order to bring them together after drawing out the loop of intestine to be operated on. Carbolised protective is then to be laid round the protruding loop, which may now be opened and freed of its contents, the upper portion of the tube being washed out with a warm carbolic solution, 1–200. In acute obstruction, Rehn[b] recommends washing out the stomach before and during the operation. This he believes to be very effective if the distended intestines are not readily manipulated when exploring the abdominal cavity for the seat of obstruction.

In reference to the important question of closing the lumen of the intestine during section and suture, I fully agree with Sir W. MacCormac,[c] when he says—"The fingers are probably the best form of instrument to prevent the escape of the intestinal contents after division of the tube." Parkes[d] is even more definite on the point. He says—"The fingers of a reliable assistant constitute by far the best clamp in resecting the intestine." However, besides digital compression the intestinal tube may be accluded by (1) a loop of silk, (2) a piece of elastic tube drawn round gut, (3) improvised clamps as blades of forceps, covered with rubber tubing, (4) the elastic compresses of Rydygier,

[a] Arch. für klin. Chir. XXVII., p. 277. Ueber circuläre Darmnaht und Darmresection.

[b] Centralblatt für Chir. XXX., p. 87.

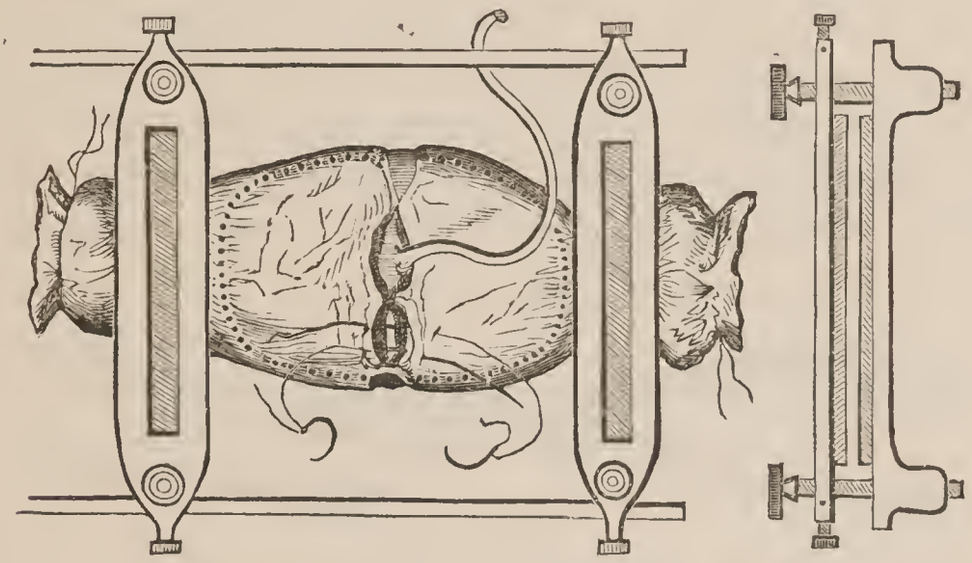
[c] Oration on Abdominal Sec. before Med. Sec., London, May 2nd, 1887.

[d] Annals of Surgery, Nov., 1887.

(5) clamp forceps, Makins, (6), Treves' clamp, (7) Bishop's clamp, &c.

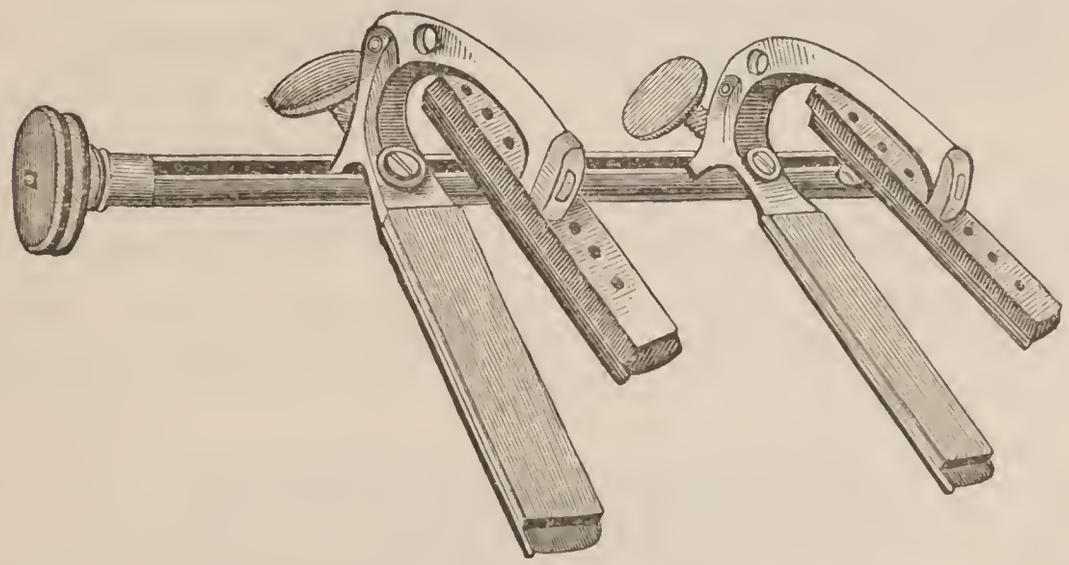
Loops of silk, rubber tubing, and Rydygier's compresses, are objectionable for two reasons. First, they necessitate a perforation of the mesentery at their point of application. Second, you cannot regulate the amount of pressure used in closing tube, and injury to its walls may result.

Fig. 4.



Treves' clamp (Fig. 4) also requires the mesentery to be perforated, and I think it would impede the suturing at the point where the mesentery joins the bowel; and this is undoubtedly the situation in which the greatest care is necessary in approximating the serous layers.

Fig. 5.

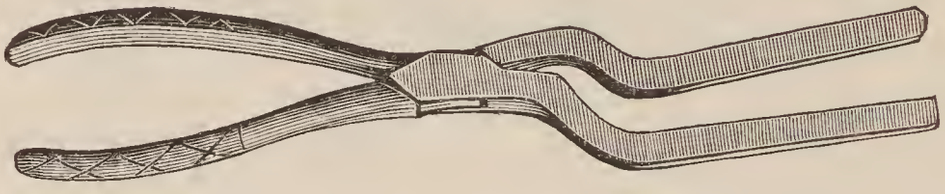


The principle of Bishop's clamp (Fig. 5) seems better, but the appliance is cumbersome, and would be difficult of application unless the parts to be operated on could on all occasions be brought out through the abdominal incision.

Fig. 6 A.

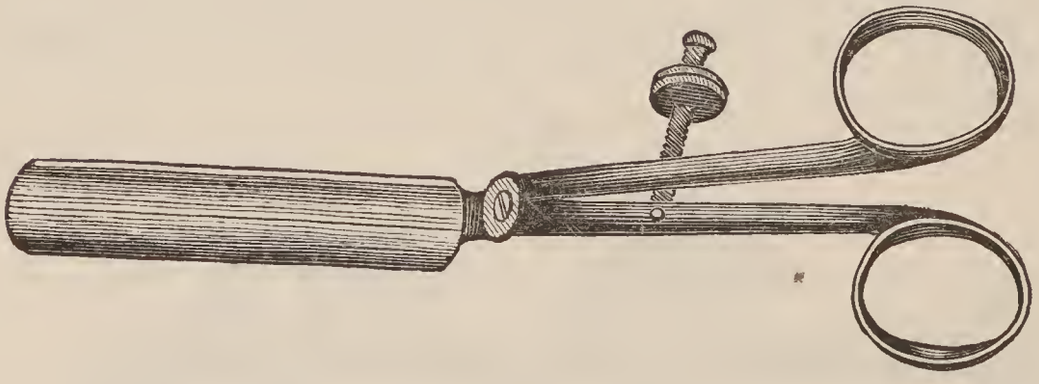
The "provisional" clamp forceps of Makins (Fig. 6, A) seems to me the most convenient. They are light, the pressure easily regulated by the screw, and they can be used in resection of all parts of the intestinal canal. Ivory clamps, as depicted by Bernays, in the *St. Louis Medical Brief*, 1887, p. 310, Vol. XV., are more convenient than those of Treves, but they also require in their application an undesirable interference with the mesentery. For colectomy and colotomy, in both of which clamps are more useful

Fig. 6 B.



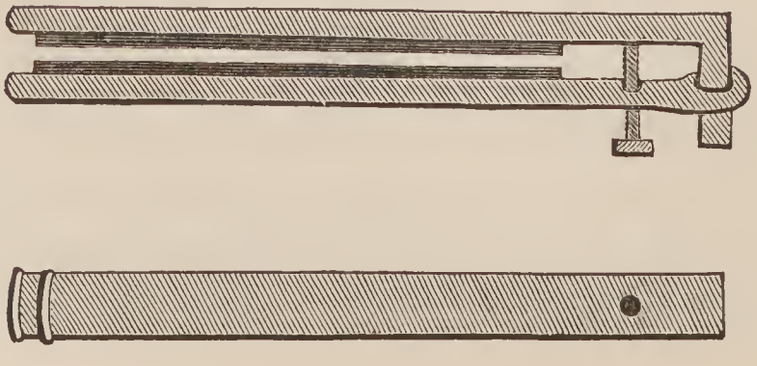
than in operations on the small intestine, the forceps (Fig. 6, B, also taken from Bernays' paper) will prove of use; but a more

Fig. 7.



useful and yet simple clamp is the one (Fig. 7) represented in Mr. Ball's work on the rectum. The blades of this instrument run parallel to each other, so that at no point is compression

Fig. 8.

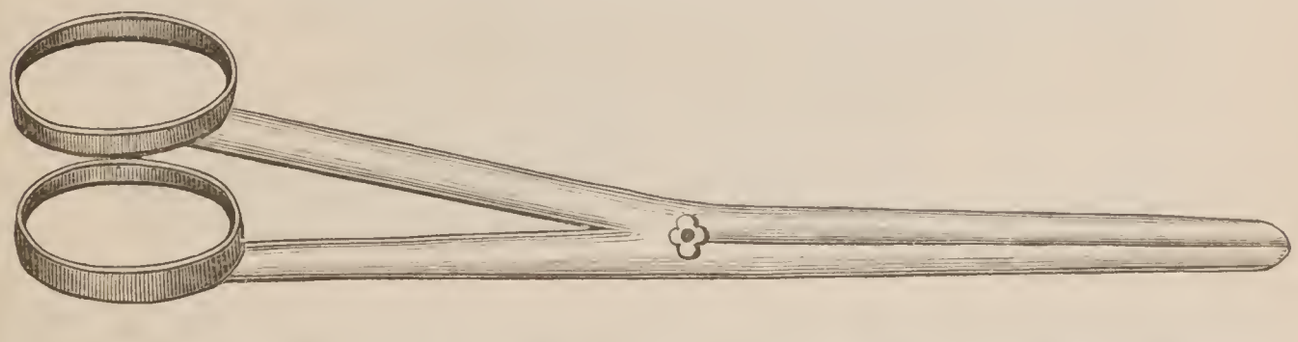


immoderate. An instrument such as I have had constructed, with thin blades, and without long handles (as Fig. 8), answers admirably for enterectomy. There is, however, a growing tendency to the relinquishing of all appliances which in any way impede the laying on of the sutures, and as most of the clamps in use interfere with the procedure at some part of the operation, surgeons are relying on digital compression as the form least liable to injure the intestinal wall, interfere with the mesentery, or retard the suturing of the bowel.

I have found digital compression, even in deep-seated resections, quite effective, and far exceeding any clamp in usefulness (when carried out by one knowing the requirements of such a procedure).

Section of the bowel is usually made at right angles to its course. Berger[a] asks would not oblique section be better than vertical? It might, as he suggests, prevent the strain on one spot, or it might prove useful when bringing together portions of the intestinal tract in which sections of the tube differ in size, but it will increase the number of sutures required, and this is a serious objection. As in pylorus resection scissors divide the bowel best, I have had those figured in the accompanying woodcut (Fig. 9) made for the purpose. They are sufficiently long in the blades to divide any part of the intestine in a single sweep.

Fig. 9.

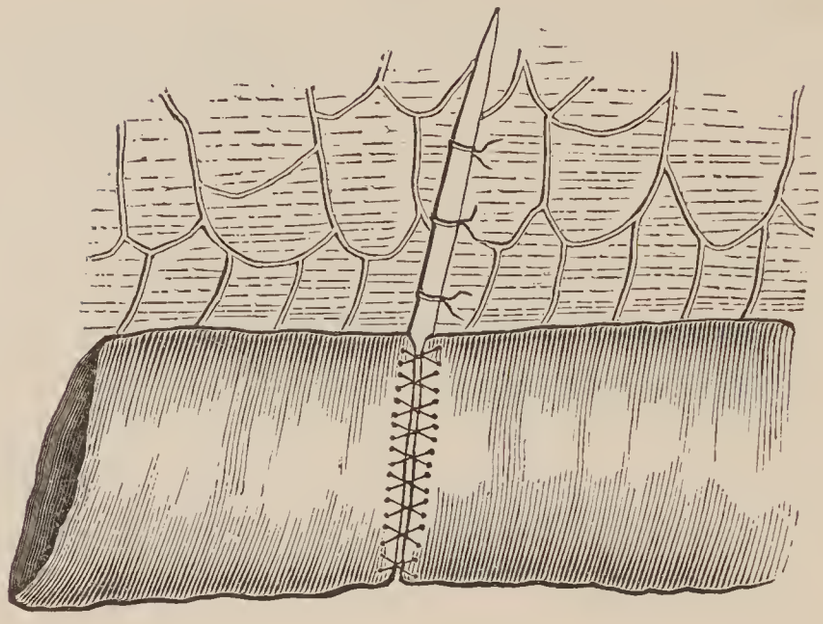


There is a point of great importance in reference to section of the gut, and that is the necessity of avoiding all paring away of the mucous membrane, which usually projects beyond the other coats after section is complete. In all the cases in which the projecting membrane was removed the sutures ulcerated through.

The methods of dealing with the mesentery are—First. The removal of a triangular piece with its base towards the intestine,

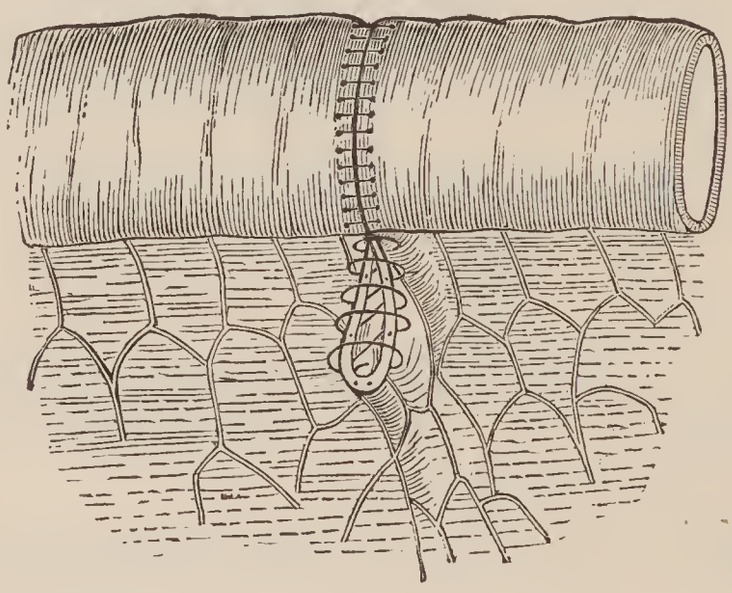
[a] Bulletin et Mémoires Soc. de Chir., Paris. 1883.

Fig. 10.



and the subsequent suture of the cleft, as in Fig. 10. Second. The leaving behind, as described by Parkes, of the serous and muscular portion of bowel where the mesentery adheres, and subsequent

Fig. 11.

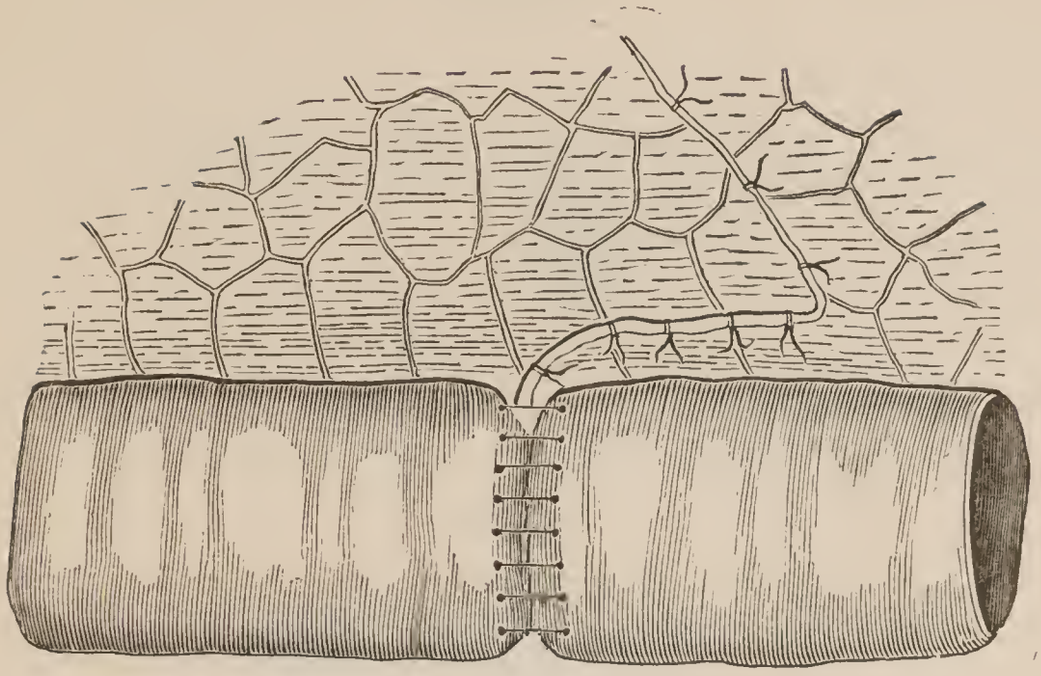


formation of this part into a loop, as in Fig. 11. Third. The folding down of the redundant portion of the mesentery, as in Fig. 12, and suture of it to the neighbouring piece of mesentery.

The question of dealing properly with the mesentery is of the greatest importance, for, as first pointed out by Madelung,[a] any interference with the blood supply at the mesenteric edge of the bowel leads to gangrene at the line of suture and fæcal extravasation. Madelung's method of dealing with the mesentery after removal of the triangular piece is as follows:—He brings the

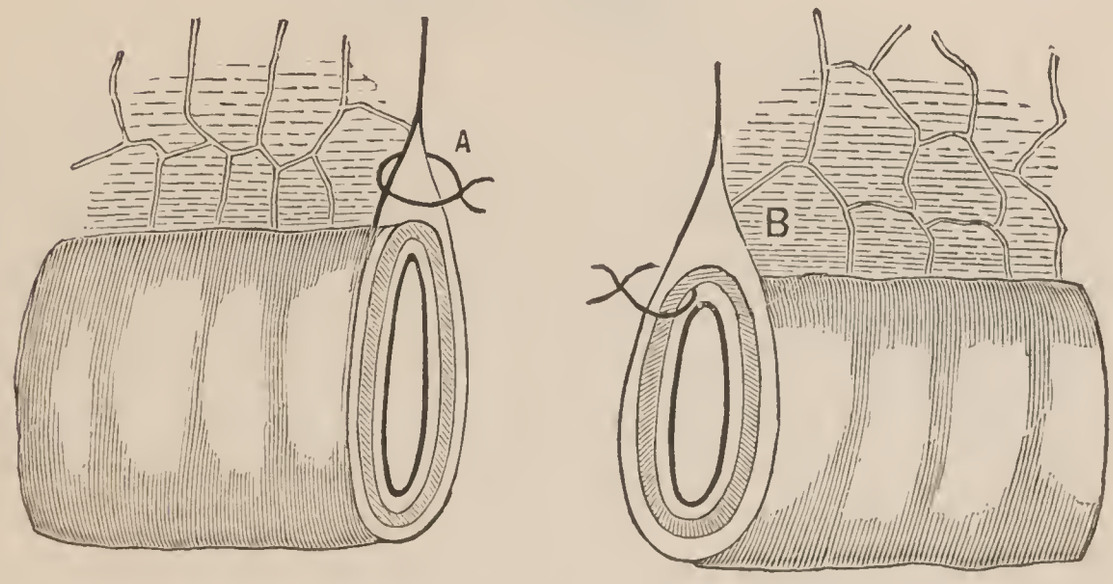
[a] Langenbeck's Arch., Nov. 27, 306.

Fig. 12.



borders of the mesentery together with suture (Fig. 10); then, as in Fig. 13, A, he sutures the layers of mesentery to each other;

Fig. 13.



then, as in Fig. 13, B, he unites the serous to the muscular layer of the bowel by one suture on each side of the attachment of the mesentery. He always begins suture of the intestine itself at the mesentery.

Curtis[a] details a method of folding down the mesentery on the side of the bowel with a Lembert suture, which, when (as in Fig. 14 A) drawn upon, brings the parts together (as Fig. 14 B). This, as Curtis says, disposes of the thickest parts of the mesentery. On each side of this suture, and close to it, a Lembert suture is

[a] Internat. Jour. Med. Sc. Oct., 1887, p. 325.

Fig. 14 A.

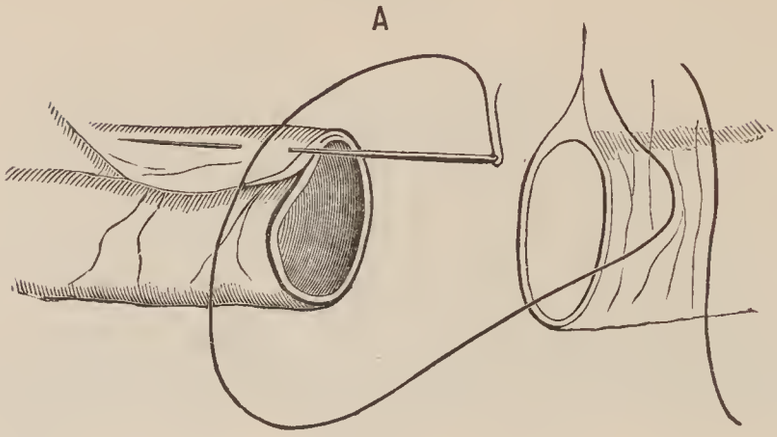
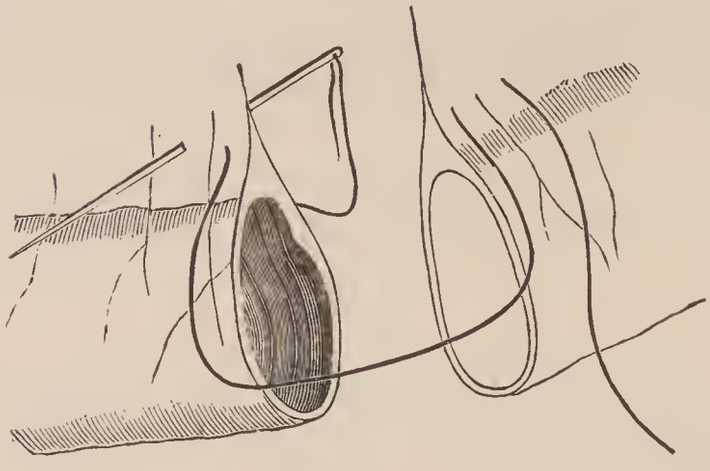


Fig. 14 B.

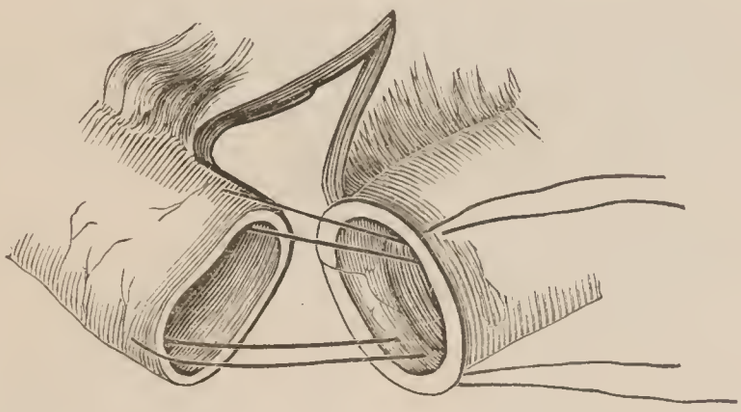


applied. The one passing through where the mesentery is folded down should go deep enough to engage the muscular wall of the bowel. In removing the mesentery it must be remembered that every segment of the intestine, no matter how small, when detached from the mesentery, sloughs away, and septic or perforate peritonitis results. If carefully carried out, the method dealing with the mesentery recommended by Madelung should prove effective. It has done so with me on two occasions.

We next come to the question of intestinal sutures, and before alluding to the methods of applying the sutures, it may be well to speak of the materials used. Rydygier and others use catgut, but Billroth, Czerny, Madelung, and indeed most operators, now use silk, and that of the finest quality, usually No. 0 Chinese twist. The objections to catgut are—1st. Its liability to yield too soon; 2nd. The finest catgut requires a much larger needle than does No. 0 silk; 3rd. It is not as pliable or as easily manipulated as the silk. There is really no valid objection to the use of silk, and although I have had good results with catgut I believe that in the case quoted in this paper yielding of one or more of the catgut sutures led to the formation of a temporary fistula. In dealing with the

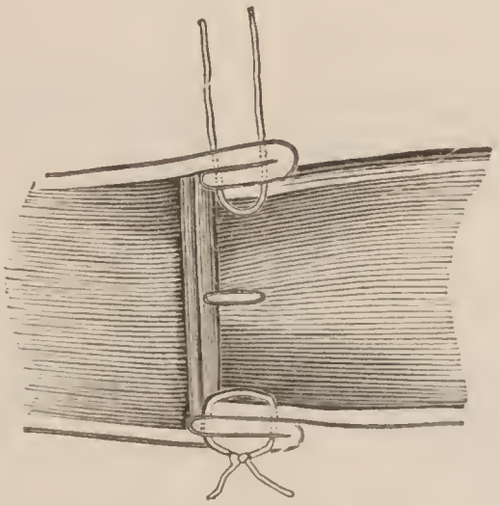
varieties of suture I will not attempt to give a detailed account of all those described; but the important methods of suture require a word of comment. The plan of drawing the cut ends of the intestine over the ferules, as mentioned by Denans, or using instead pieces of dried intestine, trachea, or tubular pieces of wood, has few supporters now. There are on record cases of recovery after this method, and if accurately-fitting cylinders of gelatine or wax with a sufficiently large lumen are used they should have a protective influence on the line of suture; as a rule, however, the first peristaltic wave displaces them, and they act injuriously.

Fig. 15.



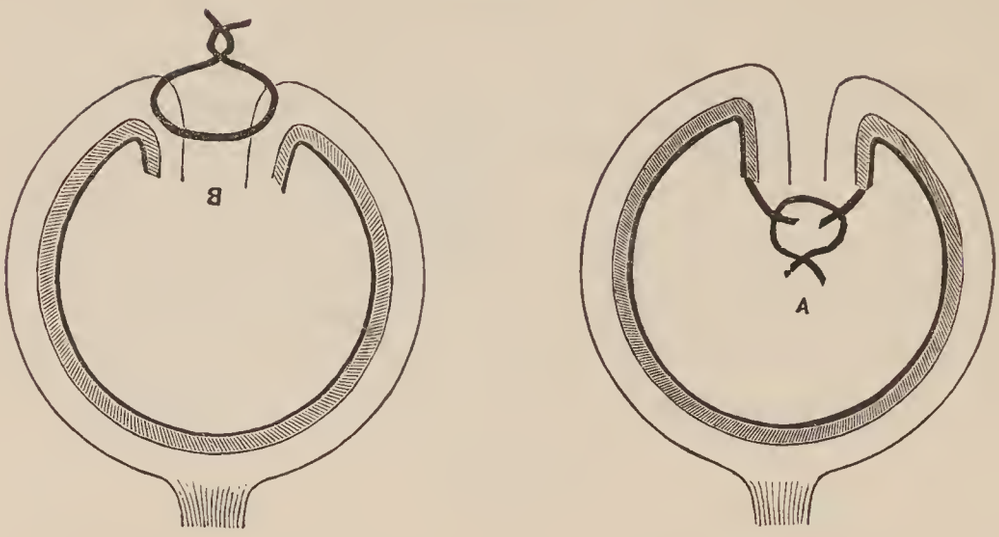
The method of invagination (Ramdohr, 1727) adopted and improved by Jobert (Costelloe's Ency., 1822), (Fig. 15) has, like most of the methods, been occasionally successful. The delay occasioned by inverting the edges of the receiving part, and in drawing one part of the tube into the other, is a grave objection to its adoption, and the necessary separation of the mesentery from the invaginated portion exposes it to gangrene, as shown by Madelung's experiments.

Fig. 16 A.



The mucous stitch of Czerny (Fig. 16 A) or the serous one of

Fig. 16 B.



Lembert (Fig. 16 B) will prove unsatisfactory; but the combination known as Czerny-Lembert Suture (Fig. 16 C) is the one now

Fig. 16 C.

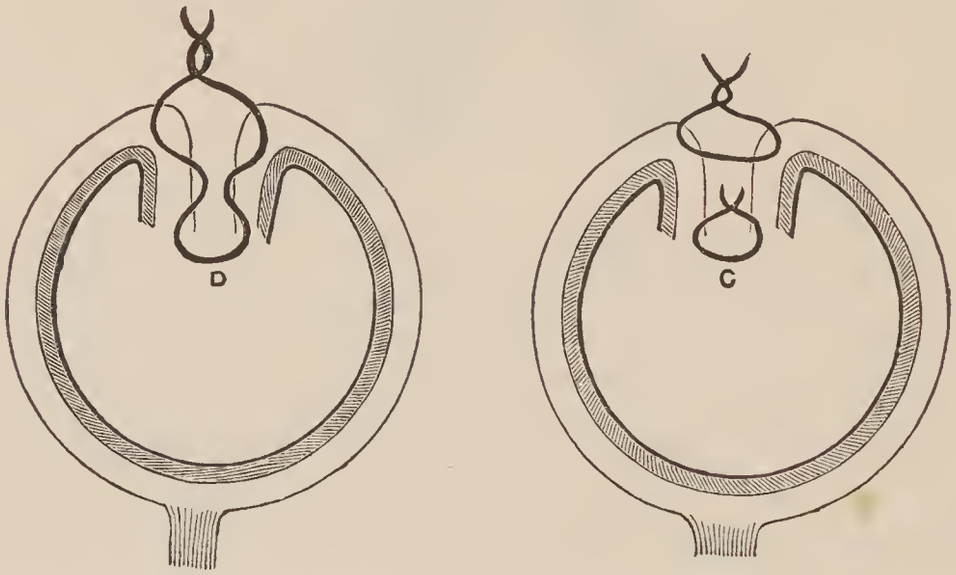
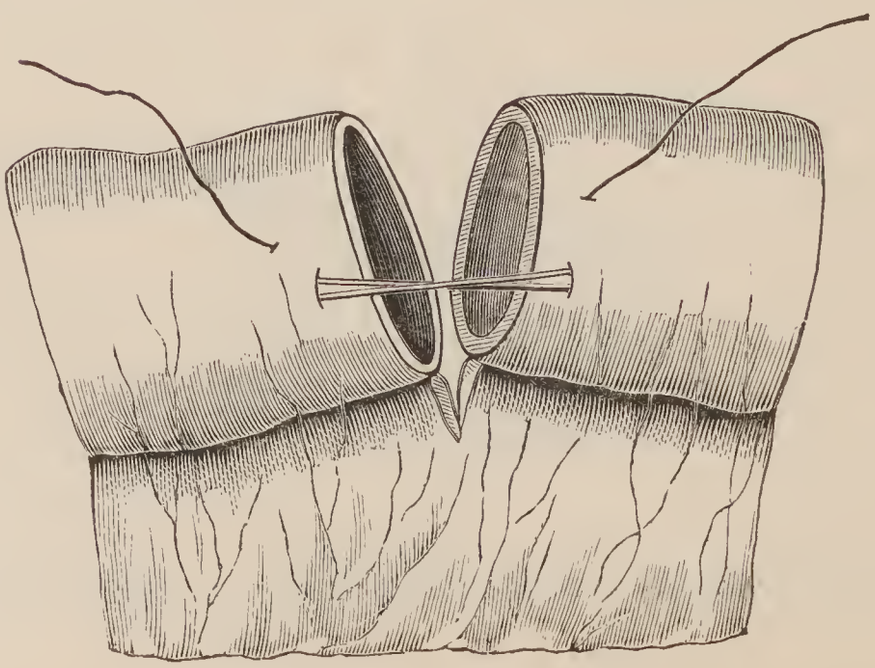
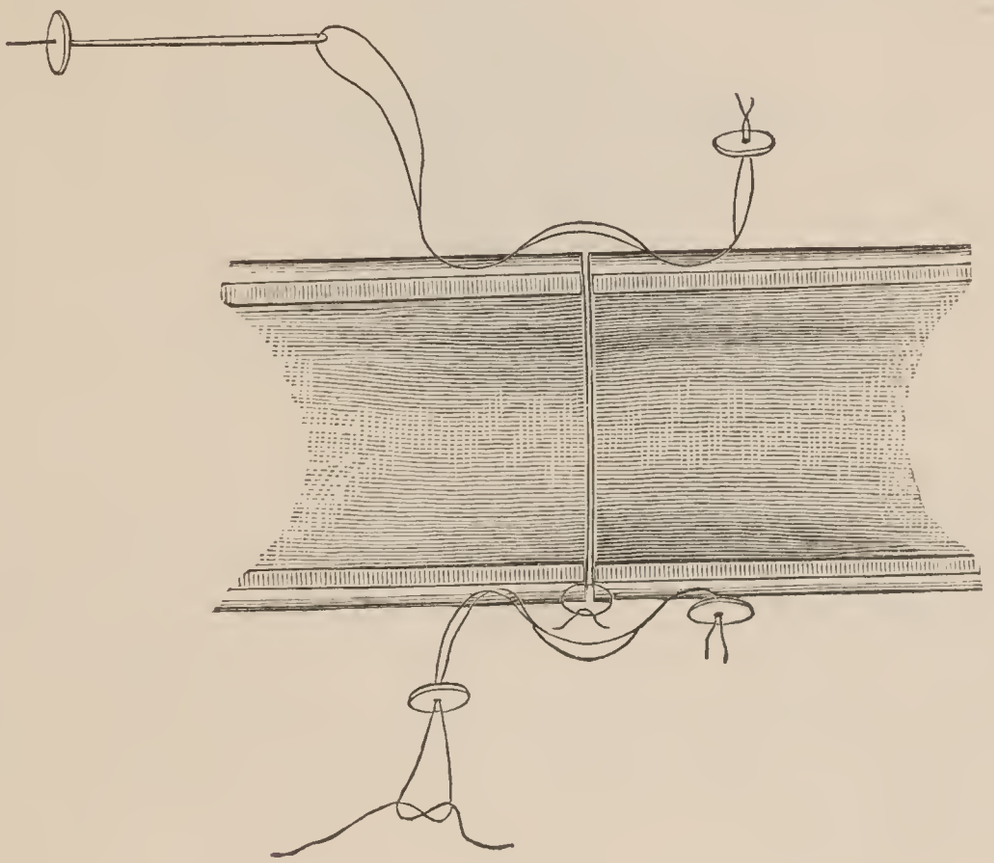


Fig. 16 D.



most in favour, and but for the delay occasioned by its application might be looked upon as perfect. Gussenbaur's suture (Fig. 16 D) is said to be very effective; but the deep and superficial coaptation of the serous surfaces occurs on the same line, while in the previous method the deep and superficial sutures alternate. Gély's suture

Fig. 17.

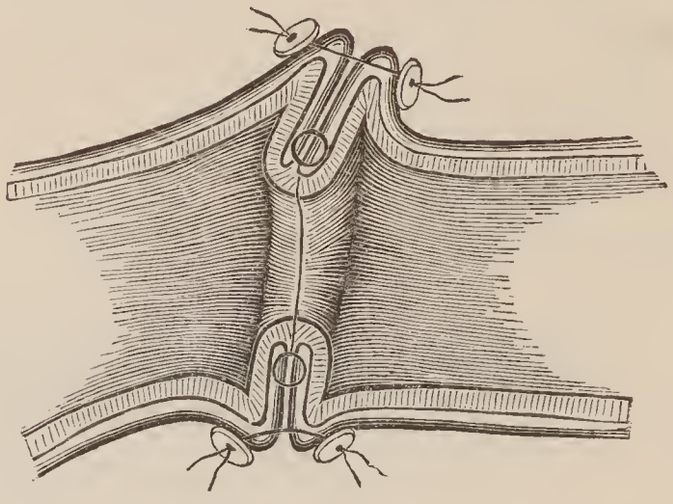


(Fig. 17), like all continuous ones, is objectionable on the following grounds:—1st. It occasionally produces puckering of the bowel wall. 2nd. If drawn sufficiently tight it tends to cut off the blood supply to the wound border. 3rd. If the suture yields at one spot the entire line of suture becomes unsafe. And, 4th. In the disappearance of the sutures, the continuous one with difficulty escapes into the intestinal canal. Bell, Gross, Parker, and others recommend interrupted sutures passed through the entire thickness of the bowel, entering one-twelfth of an inch from the serous border and drawn moderately tight. The objections to this method are that each suture is a new punctured wound connecting the serous coat with the cavity of the intestine; the cutting through of the mucous coat by the sutures destroys what in most of the other methods is looked upon as a protective to the wound border—viz., the redundant mucous membrane.

The continuous serous suture of Dupuytren, and the suture somewhat similar described by Appolito, are not so objectionable as

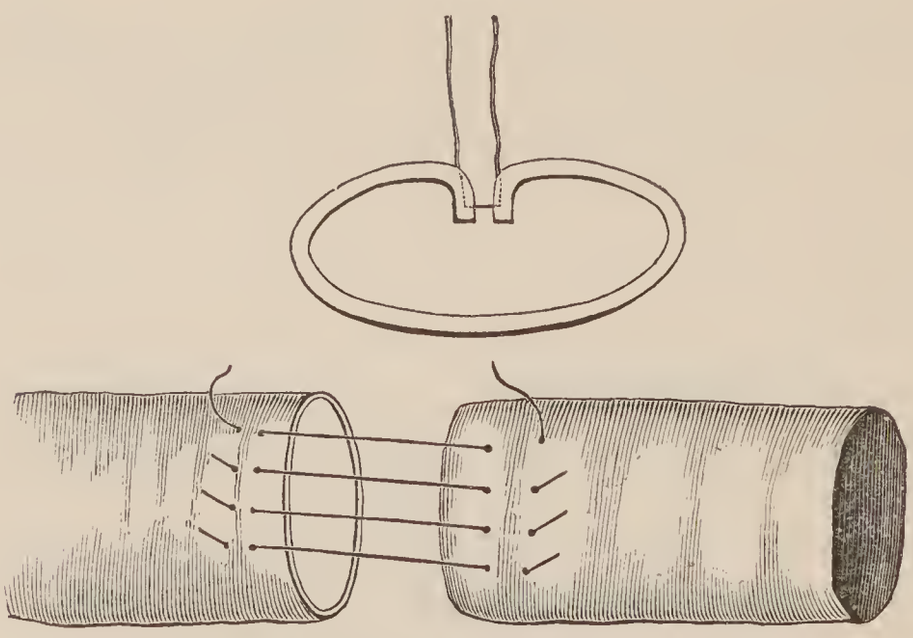
the ones which engage all the coats of the bowel. They are not, however, as reliable as the double row. The rapidity with which they can be applied is greatly in their favour.

Fig. 18.



Madelung's method (Fig. 18) is theoretically the most perfect. It is a Czerny-Lembert suture, the superficial threads being passed through small plates of cartilage, which, being approximated and the threads knotted, keep up apposition of the serous surfaces over fairly large areas, thus requiring fewer points of suture than the other methods. The method of applying Lembert's suture is shown in Fig. 19.

Fig. 19.



The needles used for intestinal suture should be the finest that will carry a No. 0 thread. The half curved needles made for me by Messrs. Fannin, Grafton-street, suit admirably. They are easily manipulated; the ordinary needle-holders grasp them in any

position, and No. 0 silk exactly fills their track when used double, as it may be with advantage.

With increasing dexterity in carrying out each step of the operation, the suturing after Czerny-Lembert's method should be performed with sufficient speed to interfere but little with the length of the operation. This point once reached, I think we may depend on the double serous suture, or on Madelung's modification thereof.

We now come to the question of cleansing the abdomen. If the loop of intestine has been drawn out through the wound, and the operation completed outside the abdomen, a sponging of the parts near the wound with warm carbolic solution, 1–100, will suffice; but if in the operation an examination of the abdominal contents has taken place, or extravasation has occurred, or should the intestine removed be gangrenous, it is advisable to wash out the peritoneal cavity with carbolic solution 1–200, at a temperature of 99° F. This has the effect of producing an early and desirable reaction, for, in most cases, after the prolonged operation there is great collapse. Solutions of boracic or salicylic acid do equally well, as also water which has been boiled and allowed to cool down to the proper temperature. When the peritoneum is thoroughly cleansed the sutured intestine is placed close to the abdominal wound. Shede recommends its retention outside the abdomen, but this is an unnecessary and very dangerous exposure. Bouilly leaves the intestine close to the incision, while others apply the loop by a few sutures to the peritoneum at the lips of the wound. The retention outside the abdomen unnecessarily exposes parts which require the warmth and moisture of the abdomen for their restoration, while any fixing of the intestine would tend to a tearing through of the sutures during peristalsis. Leaving the loop free in the abdomen, suturing the abdominal wound with silver wire or strong silk, and passing a fairly large drain into the most dependent part of the wound, seems the most successful way of completing the operation.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Report on Anæmia, or Beri-Beri, of Ceylon. By W. R. Kynsey, F.K.Q.C.P.; Principal Civil Medical Officer and Inspector-General of Hospitals, Ceylon. Colombo: George J. A. Skeen. 1887.

The object of this valuable report is to point out the identity of the Beri-Beri, or anæmia of Ceylon, with the disease produced by the presence in the intestine of the parasitic worm, ankylostomum duodenale.

The term Beri-Beri has lately fallen into disuse, owing to the fact that the older writers included under it several distinct diseases. If, however, the well-known forms of dropsy, paralysis, rheumatism, and other diseases, be separated, there remain the cases of anæmia, whose ætiology has been up to the present obscure.

It is shown that the disease known as Beri-Beri in the Malay Archipelago is different from the Beri-Beri of Ceylon. In the former paralytic symptoms are marked, in the latter, while there is difficulty in locomotion, owing to the œdema of the lower extremities, there is no true paralysis. The derivation of the word, also, is different in the two cases. There are at least two principal forms of anæmia included under descriptions of the Beri-Beri of Ceylon—

1. That form which is the result of malarial poisoning. Here there is the history of fever and of residence in a malarial district. The symptoms are debility, impoverishment of blood, enlargement of the spleen, followed by dropsy, and rarely by paralysis. The symptoms are all benefited by removal to a healthy place, and by anti-malarial remedies.

2. That which forms the subject of the report, and which depends on the presence in the duodenum and jejunum of the ankylostomum, and perhaps on the presence in the cæcum of the trichocephalus dispar. The anæmia, an oligo-cythæmia, is due to loss of blood.

The descriptions of ankylostomiasis agree in every respect with those of beri-beri :—

"Both are most prevalent in the tropics, but may and do develop beyond these regions ; both prevail most extensively in seasons characterised by a high degree of atmospheric moisture and temperature; both are most prevalent on the sea-coast, and along the banks of great rivers, dampness, wetness, or swampiness being the characteristics of the soil; but there is no connection with malaria. The area or centres where both prevail are often narrowly circumscribed, while adjoining districts with the same climatic influences escape; both attack bodies of men collected together under bad hygienic conditions, and those of strong physique are equally liable to be attacked with the weak, but those living on innutritious food, or food not corresponding to the metabolisms and blood-making, or to the needs of the body, such as rice and dried fish, suffer the most severely; both are due to the use of bad drinking-water, and both recover, if the anæmia has not advanced too far, on leaving the focus of the disease and changing the mode of living, particularly by the use of nutritious blood-forming food ; both attack at all ages, but adults and males are more frequently affected than females or very young children; but the latter suffer when crowded in schools or reformatories with bad sanitary arrangements. In both, predisposition increases with the length of time spent at the focus of disease, and a residence of some months is necessary before the disease is developed ; and, as regards race, the natives suffer more than the Europeans ; but the latter, living under the same conditions as the natives, suffer equally. In both the anchylostoma duodenale is found—in mild cases in small numbers, in severe cases in large numbers, and in old atrophic cases there is evidence they were present, although none are found on *post-mortem* examination ; neither is communicable from person to person. In both, anthelmintic remedies give relief or cure, and in both sudden death, so prominently alluded to in old descriptions of Beri-Beri, and by Professor Maclean, is appallingly frequent."

The embryos of ankylostomum develop most rapidly when the atmosphere is moist and the temperature between 25° and 30° C. Cold and dryness prevent their growth, and often bring an outbreak to an end. The disease is frequent along the banks of rivers, particularly those which overflow their banks, as the ova are thus deposited in shallow pools, where they develop, and get into drinking-water.

The parasite Ankylostomum or Sclerostoma duodenale, or Dochmius duodenalis, was discovered in Milan in 1838. It belongs to the genus Dochmius, order Nematodes, family Strongylidæ, and,

along with the order Acanthocephala, forms the class Nemathelminthes.

Its appearance is characteristic and unmistakable:—"The form of the body is fairly compact, cylindrical—the length exceeds the breadth twenty times—whitish ash-coloured, reddish or black. The head is plainly seen bent towards the dorsal side. The posterior extremity is not bent, is pointed in the female and broad in the male." Leuckart found the length of the female 10 to 12 mm., rarely 18 mm.; the greatest thickness 1 mm. He found the male 6 to 8 mm. in length, rarely 10 mm. They exist in the duodenum and upper part of the jejunum. They bite into the mucous membrane, and suck the blood. It would appear that they absorb only the plasma, and do not digest the corpuscles. When removed they leave an ecchymosed spot, the size of a lentil. It has been calculated that when the worms are numerous the loss of blood caused by them is considerable.

The number of larvæ is very great, and may be counted by millions. They gain access to the body by drinking water, or from the soil itself, when these are contaminated by fæces. "Labourers who take their meals on the spot, and carry their food to their mouths with soiled fingers, children after crawling on the dirty ground on their hands, carry them to their mouths, and become infected."

The symptoms depend in their severity on the number of worms present, and on the presence or absence of other enfeebling influences. They may be divided into three stages—1. The dyspeptic. 2. The anæmic. 3. The dropsical.

In the first stage the patient complains of sickness and disturbed digestion. The appetite is sometimes increased, and often perverted. There is pain in the hypochondria and at the ensiform cartilage increased by pressure, flatulence, nausea, vomiting, and constipation, often alternating with diarrhœa.

In the anæmic stage there is pain, palpitation, and dyspnœa, on making any exertion. The face and mucous membranes are pale and bloodless; there are giddiness, dimness of vision, tendency to syncope, and great weakness, and sometimes numbness of the extremities. There are anæmic murmurs over the heart and in the neck. Dropsy now sets in, beginning as œdema of the face and extremities, with some fever, and followed by effusion into the serous cavities, hæmorrhage from the bowels, diarrhœa, and death, which is often sudden.

In chronic cases there is emaciation, fatty degeneration and dilatation of the heart. Children, when affected, develop badly; so that "at 25 years of age they look like children of 10 or 12."

The diagnosis is made by the history, the peculiar anæmia and diminution of blood corpuscles, and above all by the presence of the ova of the parasite in the fæces—

"The ovum is oval, with a very thin shell, and often a clear space between the wall and the contents. It is always found in a state of segmentation, but only in the primary stage, there being no more than three or four segments present. If the ova be kept in a drop of water, in a moist atmosphere, for from 24 to 48 hours, the embryo is seen formed within the shell, and may be often observed in the act of passing out of it."

The prognosis depends on the stage of the disease and the possibility of removing the patient from the risk of further infection.

The treatment consists in purgatives, followed by thymol given in 30-grain doses every two hours, two or three times. After the expulsion of the worms the anæmia is to be combated by iron and tonics, with good food. The dropsy and cardiac symptoms are relieved by digitalis. The prophylactic treatment is obvious.

The following are the conclusions and summary of this able report:—

"That the 'wet' or 'dropsical' form of beri-beri, or the beri-beri of Ceylon, depends on the presence of the anchylostoma duodenale in the intestinal canal—is, in fact, anchylostomiasis.

"That while weakness, feebleness, or even numbness are present, or follow the Ceylon disease, there are no true motor paralytic symptoms. The paralytic form is not known, nor, as far as I have been able to ascertain, is the Ceylon disease followed by paralysis. The cases end in cure or death, or old chronic cases in atrophy with feebleness. In the beri-beri of other countries paralytic symptoms are present from the beginning or follow the dropsy.

"That the Ceylon disease may run an acute or chronic course, and that death is often appallingly sudden. The severity of the symptoms depends on the number of the parasites present in the intestines, the state of health, and the food.

"That the residence in an infected centre is necessary before the symptoms become fully developed. During this period the person is acquiring the parasites, and losing blood from their presence, becoming anæmic, and finally dropsical if neglected.

"That the areas in Ceylon where this form of anæmia, or beri-beri, is prevalent will be found to present the conditions enumerated above, and

that the cause will in all cases be the presence of the larvæ of these parasites in the drinking-water.

"That the disease, if recognised early enough in the dyspeptic or anæmic stage, yields readily to treatment; but if the cases be neglected, and dropsy sets in, with degenerative changes in the heart and other organs, the prognosis is most unfavourable.

"That removal from the infected area, with instructions not to return to it, is essential. The best remedy for the expulsion of the anchylostoma is thymol, and for the anæmia iron followed by digitalis or strophanthus. That no treatment will do good until the parasites are expelled."

To Mr. Kynsey's report are appended three translations from the German, by Dr. J. D. Macdonald. The first is the long and exhaustive essay by Lutz, "Ueber Ankylostoma duodenale und Ankylostomiasis," which appeared in 1885 in Volkmann's *Sammlung der klinischer Vorträge*, Nos. 255, 256, and 265; the second is a paper on the same subject, by Dr. Schulthess, from the *Berliner klinische Wochenschrift;* and the third an address given before the Naturforscher Versammlung at Berlin, in 1866, by Dr. Erni, in which he maintains that the trichocephalus dispar plays an important part in the production of the anæmia of beri-beri as seen in Sumatra. These are all valuable papers, and will be welcome to those who are unable to read German.

RECENT WORKS ON SURGERY.

Fairlie Clarke's Manual of the Practice of Surgery. Revised and partly rewritten by Andrew Clark, F.R.C.S. Eng.; Assistant Surgeon, Middlesex Hospital. London: Henry Renshaw. 1887. 8vo. Pp. 439.

This is another candidate for support. The ordinary manuals are too big, and therefore the student wants a book which will make things as easy for him as possible. The original "Fairlie Clarke" being out of print, a new edition is issued under the editorial supervision of Mr. Andrew Clark. We cannot say that we are pleased with the result. The student may get too much of a good thing, and the simmering down process may be carried too far. The editor has made additions to the former text; but the revision has been carried out in the most careless fashion. Here are two specimens:—"The symptoms are those of concussion, compession, or inflammation; there are no special signs indicating

bruising or laceration of the brain tissue beyond any which may point to injury to a particular spot. It makes a great difference what part of the brain is injured; if it be any of the central portions death takes place rapidly." Of tracheotomy:—"When the bleeding has ceased the surgeon steadies the trachea with a hook, and then pushes the point of his scalpel through it (the hook?), and cuts from below upwards, dividing three or four rings, the tube can then be usually slipped in without much difficulty, but care must be taken not to let go with the hook until it is in." There are several passages equally bad; others which demand a good deal of thought before the meaning is made out. The exercise may be useful to the student, but he will not like it, however kind the intention of the writer may have been. The book still wants revision, and when the next edition appears we shall be glad if we can speak favourably of it.

Surgical Pathology and Morbid Anatomy. By Anthony A. Bowlby, F.R.C.S. Eng., Demonstrator of Surgical Pathology at St. Bartholomew's Hospital. London: J. & A. Churchill. 1887. 8vo. Pp. 543.

The author says his object in writing this manual has been to describe as simply as possible the various pathological processes which are of interest to the student of surgery. We think he may be congratulated on having attained his purpose. The book is a model of what a student's "Guide" should be on such a subject. Pathology is not attractive to the ordinary pupil, and it is often made repulsive by the too great minuteness with which it is presented. What is wanted is, that the subject should be put in such form as to enable the student to grasp its principles, and with just so much detail as will enable him to understand their application. Mr. Bowlby has succeeded in making the subject very attractive. We have gone through the book with real pleasure, and we wish that all publications of this sort were written as well.

Surgery; its Theory and Practice. By William Johnson Walsham, F.R.C.S. Eng.; Surgeon to St. Bartholomew's Hospital. London: J. & A. Churchill. 1887. 8vo. Pp. 744.

This book belongs to the student's guide series. It adds another to the numerous text-books on surgery provided for the use of students. The author excuses his undertaking by observing that most publications on the subject are too big for the student, and

that it is quite impossible for him to master them during the comparatively limited period allotted to dressing in the wards and out-patient room. The intention, however, is not to supplant, but to supplement, the manuals at present in use; and yet, if this principle is carried out, the student will find that he has only added another book to his burden. We think, however, that Mr. Walsham is too modest in his estimate of what he has done. For its size, his "Guide" is really very good, and is, in some respects, better than some more pretentious manuals. A student who knew this book well would have a very good knowledge of surgery for a student, and probably quite enough to satisfy the requirements of an ordinary pass-examination. Of course the rare diseases and injuries are passed over; but the general principles of surgery are undoubtedly well put. The style is pleasant, clear, and unlaboured; the illustrations are good and many; and altogether, we believe, the book will find and hold a place with the class for whom it is specially intended.

Illustrations of Clinical Surgery. By Jonathan Hutchinson, F.R.S., LL.D.; Consulting Surgeon to the London Hospital. Parts XX. and XXI. London: J. & A. Churchill. 1887.

We have now reached the end of the second volume of these most important illustrations of clinical surgery. Everything that Mr. Hutchinson does is thorough, and we take it that this venture has been successful, because the publication continues. To the teacher of surgery, either in the wards or in the lecture-theatre, the use of the plates and notes must be of the greatest value, and we hope that nothing will occur to interfere with their regular issue.

In his observations upon some cases of epithelial cancer the author observes that he does not know a single case in which he could say for certain that the disease, when removed from the lip by operation, did not return. That entirely accords with our own experience. The only chance of success is when the ulcer is small, of very limited age, and so far unattended by glandular contamination.

There are some admirable illustrations of various forms of congenital syphilis as it shows itself in the finger-nails and mouth, and also of affections of the eye. The accompanying letterpress is sufficiently full for explanatory purposes, and here and there interesting points are noted and dwelt upon.

Experimental Chemistry for Junior Students. By J. EMERSON REYNOLDS, M.D., F.R.S. Part IV. Chemistry of Carbon Compounds; or, Organic Chemistry. London: Longmans, Green & Co. 1887. Pp. 375.

IN this, the concluding volume of the compact little series of books upon Experimental Chemistry, Dr. Reynolds attacks the most difficult department of the science. After a careful examination we think that the author has thoroughly succeeded in his aim of providing the student with a practical, as well as theoretical introduction to the chemistry of the carbon compounds. Some knowledge of organic chemistry is absolutely indispensable to every well-informed medical man, and numerous excellent works exist from which he can gather a sufficient theoretical knowledge of the subject. But we do not know of any book, other than the one before us, which seeks throughout to harmonise the experimental with the systematic study of carbon compounds, and we feel assured that anyone who has performed the 150 experiments described by Dr. Reynolds, and reasoned out their meaning, will have gained a firm grasp of the broad facts and principles of organic chemistry. Considering the necessarily limited size of the book, which is a marvel of condensation, the student would do well to supplement his studies by the perusal of a larger systematic work, which would show him more fully, and under other aspects, the mutual relations of the main groups of organic compounds.

The book is carefully planned and concisely written, and the order in which the topics are discussed is this. Commencing with starch as the first recognisable product of assimilation in plants, and the parent of many other compounds that contribute to form the plant structure, the student is taught how to investigate the products of the destructive distillation of wood. This at once opens up the groups of hydro-carbons, alcohols, and their derivatives. Then by easy steps he is led through the principal subdivisions of the members of the paraffin, or methane group, and so on to the diad ethylene group, and from that to the higher alcohols, including the sugars. As might be expected, the remainder of the book is occupied with the study of the "aromatic" compounds, or derivatives of benzene ($C_6 H_6$); and here we must congratulate the author upon the skill with which he has woven a lucid account of the most important or most interesting members of the vast multitude of compounds which present themselves for notice. An

appendix upon the ultimate analysis of organic compounds, drawn up by Dr. A. Dixon, completes a work for which we anticipate a cordial reception, and which fully sustains the reputation of the author as a teacher and as an investigator.

Euthanasia; or, the Medical Treatment in Aid of an Easy Death. By William Munk, M.D., F.S.A., Fellow and late Censor of the Royal College of Physicians, &c. London: Longmans, Green, & Co. 1887. 16mo. Pp. 105.

This is an unconscionably dear little book. Its ninety-six large-type and widely-spaced pages contain, perhaps, matter enough for an hour's lecture. Yet there are many men so constituted that they will leave unnoticed a pamphlet priced at fourpence-halfpenny, but will read—and even buy—the same words, arrayed in fashionable apparel, and costing four-and-sixpence. To these we commend this little volume. The subject is one which—to quote a quotation of the author's—"a medicis vix inchoatum, nedum pertractatum hucusque esset." It has never received the attention it deserves from our profession; partly, no doubt, because the practitioner is rarely present at the close of life. Having fought the enemy so long as any hope remained, he retires before overwhelming superiority of force. He leaves the last moments of his patient to be soothed by other presence than his own. In the last of the three chapters of this little booklet, Dr. Munk shows how much may be done, and ought to be done, to smooth the path to death. His remarks on the use of opium are specially valuable; but the entire chapter is excellent. Although, indeed, he professes to dismiss all thought of prolongation of life when, *ex hypothesi*, a patient is certainly dying, he seems to us to lapse now and then into the habit of mind, characteristic of and inveterate in the physician, which overrates the value of mere physical life, and regards its continuance as in itself a good. This natural weakness—if, indeed, we are not mistaken in imputing it—detracts but little from the value of the chapter. May we claim Dr. Munk as a compatriot on the internal evidence of the expression, "prone position on the back?" (p. 98). The other chapters treat of the Phenomena of Dying and the Symptoms and modes of Dying; the former making it clear that the close of life, however distressing to witness, is, in the vast majority of cases, painless to the dying. We advise all who can borrow this little book to read it.

RECENT WORKS ON METEOROLOGY.

1. *Weather: a Popular Exposition of the Nature of Weather-Changes from Day to Day.* By the Hon. Ralph Abercrombie, Fellow of the Royal Meteorological Society, London; Member of the Scottish Meteorological Society; and Author of "Principles of Forecasting by means of Weather Charts." London: Kegan Paul, Trench & Co. The International Scientific Series. Vol. LIX. 1887. Crown 8vo. Pp. 472.

2. *Weather Charts and Storm Warnings.* By Robert H. Scott, M.A., F.R.S., Secretary to the Meteorological Council. Third Edition, revised and enlarged. London: Longmans, Green & Co. 1887. Crown 8vo. Pp. 229.

3. *Journal of the Scottish Meteorological Society.* Third Series, Vol. VII., Nos. 1, 2, and 3. Edinburgh and London: William Blackwood & Sons. 1886. 8vo. Pp 416. Also Vol. VIII., No. 4. Pp. 188.

4. *Report of the Meteorological Council to the Royal Society, for the year ending* 31*st of March*, 1886. Presented to both Houses of Parliament by Command of Her Majesty. London: Eyre and Spottiswoode. 1887. 8vo. Pp. 121.

In an age of unexampled scientific progress, probably no science has made as rapid strides as that of the Weather, or Meteorology. So recently as twenty-five years ago, little more than the statistical aspect of the subject had been studied, but even this was an important advance on the folk-lore and unscientific "Diaries of the Weather," which constituted the Meteorology of a more remote period.

The application of electricity to the elucidation of the subject within the past quarter of a century, and the development of the system of synchronous observations in nearly every civilised country of the world, have given an astonishing impetus to the study of weather phenomena, so that Meteorology is fast rising to the dignity of a precise science. Under these circumstances it is no wonder that the literature of the subject is increasing in like proportion to its importance and its fascination.

The Weather Telegraphy Service of the United Kingdom was first organised by the late Admiral Fitzroy, in the year 1861, and at the present day we find that the lead thus taken by our country has been followed by the United States ("Office of the Chief

Signal Officer, Washington"), France ("Bureau Central Météorologique de France"), Germany ("Deutsche Seewarte, Hamburg") Austria ("K.K. Central-Anstalt für Meteorologie in Wien"), Denmark ("Dansk Meteorologisk Institut"), Norway ("Norwegisches meteorologisches Institut"), Sweden ("Meteorologiska Central-anstalt, Stockholm"), Russia ("Physikalisches Central-Observatorium, St. Petersburg"), Italy ("Ufficio Centrale di Meteorologia, Roma"), Spain ("Observatorio de Madrid"), Portugal ("Observatorio do Infante D. Luiz"), Belgium ("Observatoire royal de Bruxelles"). In a word, all civilised nations, not excepting far-distant Japan ("Imperial Meteorological Observatory, Tokio"), and the Argentine Republic ("Officina Meteorológica Argentina"), have established systematic observatories or telegraphic weather services of the first importance.

It is our pleasing duty to bring under notice three valuable contributions to the literature of Meteorology. Of these two are old friends—Mr. Scott's "Weather Charts and Storm Warnings," and the "Journal of the Scottish Meteorological Society." They have already been noticed in our pages. We will, therefore, first draw attention to the Hon. Ralph Abercrombie's new contribution to Weather Science.

1. The object of Mr. Abercrombie's work—as he states in his preface—"is the same as that of other volumes of the International Scientific Series, to which it belongs—viz, to place before the general reader a short but clear picture of the modern aspects of the science of which it treats." The plan of the book is as follows:—The first three chapters are devoted to the more elementary facts of Weather Science, the remainder of the work is reserved for a discussion of its more difficult problems. In the first chapter the author briefly sketches the history of meteorology from its origin in the national myths or popular tales, which referred weather-phenomena to some supernatural or personal agency by way of explanation, through the age of popular prognostics, to that of the science of statistics at the beginning of the present century and to the present age, when the synoptic method of dealing with weather problems has been introduced with striking scientific results. By this method a chart of a large area of the earth's surface is taken, and after marking on the map the height of the barometer and the temperature at a great number of stations, lines are drawn through all such stations at which these data happen to be equal. The line, for example, drawn through all places where the barometer at a

given hour happens to read 30 inches, is called the "isobar"[a] of 30 inches, while all places having a temperature of 50° at the same moment of time are connected by the "isotherm"[b] of 50°. Then arrows to mark the direction of the wind are inserted; and, lastly, letters, or other symbols, are employed to denote the prevailing weather, cloud, rain or snow. Such a synoptic chart is published daily by the Meteorological Office, London, in the Daily Weather Report. This includes telegraphic information received from stations in Western Europe lying between 39° (Lisbon) and 67° (Bodō) N. latitude and between 10° W. longitude (Valentia, in Kerry), and 23° E. longitude (Haparanda, on the Gulf of Bothnia).

The second Chapter, on "Weather Prognostics," extends over 54 pages, and goes to show that popular prognostics of the weather merely describe the characteristic appearances and look of the sky observed in relation to the seven various types of arrangement of isobars—"cyclonic," "anticyclonic," "wedge-shaped," "straight," "V-shaped depressions," "cols," and "secondaries."

Chapter III., on "Clouds and Cloud-Prognostics," embodies the most recent researches on the subject, with which the author's name and that of the Rev. Clement Ley, M.A., are most honourably associated. It is matter for regret that the illustrations in this part of the book are so indifferent, notably those of "festooned cumulus" on page 78. Mr. Abercrombie concludes that "the constant condition necessary to form festoons is the sudden failure of an upward current of air;" but we go further in maintaining that for their production a descending current of air passing from a warmer into a colder stratum of the atmosphere is required. At page 74, the author says that in "Northern Europe and the interior of many continents cumulus usually only forms during the summer months; for the absolute amount of vapour in the air during the winter months is rarely sufficient to develop a lump of cloud." We take exception both to the statement and to the explanation. As a matter of fact, cumulus forms in heavy masses over the sea in winter, provided severe cold prevails over the neighbouring land, and that a polar air current is blowing. Such winter cumuli may be seen during northerly winds all along the eastern seaboard of Great Britain, and similarly over the Irish Sea off the east coast of Ireland, and from these sea-cumuli heavy showers of cold rain and

[a] Gk. *ἴσος*, equal; *βάρος*, weight.

[b] Gk. *ἴσος*, equal; *θέρμη*, heat.

hail, or it may be snow, often fall, while the sky is clear over the land, with a sharp frost on shore. These cumuli are evidently formed as a result of a strong ascending current of relatively warm and moist air over the sea. The moisture carried up by this current is at last condensed into cumuli, while the place of the warm sea air is taken by an undercurrent of cold air off the frozen land. This is precisely the reverse of what happens in summer, when a cool sea breeze sets towards the land to supply a vacuum in process of formation by the ascent of rarefied air from the heated land. The moisture of this warm air is, at a certain height in the atmosphere, condensed into summer, or land-cumuli, from which heavy showers, perhaps accompanied with thunder, often fall, the weather remaining fair and the sky clear over the sea.

In Chapter V. we meet with the barbarous word "Meteogram," applied to a diagram containing continuous automatic tracings of the readings of various meteorological instruments. Surely the word should be "Meteorogram." Chapter VI., on "Wind and Calm," is replete with interest, and so, indeed, is Chapter VII., on "Heat and Cold." The effects of heat and cold are thus summed up on page 225:—"In winter, wind, cloud, and rain, in temperate regions, tend to raise the temperature, as they check cold radiation; calm, on the contrary, induces hard frost. In summer, wind, cloud, and rain, are cooling influences, as they check hot radiation; calm, on the contrary, is then hot, because it allows full play for the sun's rays."

The topics considered in succeeding chapters are squalls, thunderstorms, and non-isobaric rains (VIII.); pamperos of La Plata, whirlwinds, and tornadoes of the United States (IX.); local variation of weather (X.); diurnal variation of weather (XI.); annual and secular variations (XII.); types and spells of weather (XIII.), which includes a very full account of the S.W. and N.E. monsoons of India; forecasting for solitary observers (XIV.); and, lastly, forecasting by synoptic charts (XV.). These last two chapters present us with the practical outcome of all that has gone before. The question of forecasting, as Mr. Abercrombie observes, "fall readily into two distinct problems:—1. To show all that a solitary observer, with a barometer and his eye-observations on clouds and prognostics, can do in the way of forecasting. . . . 2. To show what a meteorologist can do, seated in a central *bureau*, with telegraphic communication in all directions, and who, after making a synoptic chart, and combining it with every other modern aid,

issues telegraphic forecasts to all parts of the country." "This," the author adds, "is the highest problem of meteorology."

Enough has been said to bespeak for Mr. Abercrombie's book a cordial reception. A careful perusal of its contents cannot fail to reward all students of weather science, and we would particularly recommend the volume to candidates for diplomas in State Medicine, as well as to officers of the Army, Navy, and Indian Medical Departments.

2. A full notice of "Weather Charts and Storm Warnings," by our distinguished countryman and fellow-citizen, Mr. Robert Henry Scott, M.A., F.R.S., appeared in the number of this Journal for December, 1876,[a] shortly after the publication of the first edition of the work. The present—the third—edition displays considerable hypertrophy when compared with the original issue. The book is published at six shillings, and now runs to 229 pages instead of 158. The second edition came out in 1877, and was long out of print. The necessity for a new issue was, therefore, unquestionable, more especially when the rapid progress made in recent years in practical meteorology is remembered. The text has been entirely revised, and includes an account of the present weather work of the Meteorological Office, London, and of the changes and improvements in it since the year 1876.

The book contains four new chapters, entitled respectively—"The Distribution and Periodicity of Gales," "Forecasting," "The Weekly Weather Report," and "Cirrus Cloud Observations." The statistics contained in the first of these chapters effectually dispose of the theory of equinoctial gales so far as northern and western Europe is concerned. It is true that Lucretius calls the epochs of the equinoxes "the wartime of the year," and, in fact, an Italian may well speak of equinoctial storms; but the notion that equinoctial gales are felt in northern and western Europe was combated by Professor Dove in the last edition of his "Gesetz der Stürme" (1873), and his conclusions are amply confirmed by Mr. C. L. Prince, F. R. Met. Soc., of Uckfield, in Sussex, in a paper published in the number of the *Quarterly Journal of the Royal Meteorological Society* for January, 1887 (Vol. XIII., p. 79), and by the statistics compiled at the Meteorological Office for the seventeen years ending Easter, 1887.

The Chapter on "Forecasting" gives very interesting details of

[a] Vol. LXII. No. 60. Third Series. Page 475.

the principles upon which the official forecasts of the weather are based. The only wonder is that, bearing in mind the complexity of the available data, the forecasts are not much more frequently wrong than they are. Nevertheless there are unreasonable and unreasoning people in the world, and one of this class, who is in the habit of "firing off" post cards to the Meteorological Office, lately addressed the following message on the back of one of those useful aids to correspondence:—"*Where is your violent cyclone to burst on British coasts between nights of* 14 *and* 16? *The deadest of calms, of course!*" It so happened that this individual held the Office responsible, not for one of the official forecasts, but for an announcement in the *New York Herald*. However, all are not unbelieving, and a letter arrived in June, 1886, bearing no less than ten postmarks, addressed to the "Weather Office, Strand, London." Its contents were—"*Three next days order to be fine!*"

In addition to the Daily Weather Report, the Meteorological Office has for the last nine years issued weekly returns containing information intended to be used in agricultural and sanitary (Public Health) investigations. For some occult reason, the week, in these reports, is made to end with Monday instead of Saturday. The subjects on which data are given in this publication are—Temperature, Rainfall, and the Duration of Sunshine. In 1884 the character of this "Weekly Weather Report" was much improved, and its size was considerably enlarged. It now includes statements of the amount of rainfall and sunshine recorded in eleven different districts of the United Kingdom week by week, and of the quantity of each which has accumulated up to date from the beginning of the year. In each instance the difference from the average is given. Mention of the word "average" leads us to criticise the official use in these Weekly Weather Reports of the words "average" and "mean." It seems to us to be reverse of the correct use. Surely we should speak of the "mean temperature" and "mean rainfall" of a given week, and compare these with the "*average* mean temperature" and "*average* mean rainfall" deduced from observations for the corresponding week in a series of years. In the Weekly Weather Reports, however, we read of the "average temperature" for the week, and it is compared with the "mean temperature" for the corresponding week. The statistics of temperature include the entry "Day-degrees" under the heading "Accumulated Temperature." These terms are carefully explained by Mr. Scott in this same chapter, and it will suffice here to say that by the term "day-

degree" is meant "one degree F. of excess or defect of temperature above or below 42° F., continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours." The base of 42° F. was originally adopted at the suggestion of Professor Alphonse de Candolle, of Geneva, the author of "Géographie Botanique," who found that plants, as a rule, do not begin to give indications of active vegetation until the temperature rises above 6° C. This temperature, 6° C., or, in round numbers, 42° F.—that is, ten degrees above the freezing point—is, therefore, taken as the base for all the diagrams of temperature curves. The credit of solving the problem, how these sums of temperature were to be calculated, belongs to Lieut.-General Richard Strachey, the Chairman of the Meteorological Council of the Royal Society.

Chapter XIII., on "Cirrus Cloud Observations," embodies the Instructions devised by the Rev. W. Clement Ley and adopted by the Meteorological Council in 1885. Since then they have been issued to such of the observers connected with the Meteorological Office as are willing to undertake the reporting of cirrus movements. Clouds of the "cirrus," or "mare's-tail," type are defined as *true cirrus*, *sheet-cirrus*, *high cirro-cumulus*, and *cirrus-haze*. They are the highest kinds of cloud, and their movements across the sky, when carefully observed, are likely to prove of much value in forecasting weather-changes. A brief summary of the most obvious applications of cirrus observations in weather prediction is given at the close of Chapter XIII., on page 216.

Mr. Scott's handy volume is well supplied with illustrations, most of which have been executed by the Patent Type-founding Company, by the same process which they employ for the production of weather-charts for newspapers. There are, besides, three lithographic plates, by Malby & Sons—one in colours, which shows the distribution of clouds and weather in a typical cyclonic disturbance, according to the Rev. W. Clement Ley.

3. Recent numbers of the "Journal of the Scottish Meteorological Society" bear eloquent testimony to the continued valuable work which is being done by that Society. The first number of the third series contains the usual tables for the year 1883, illustrative of the meteorology of Scotland for that year. In it also may be found a very instructive paper by Mr. Alexander Buchan, the Meteorological Secretary, on the "Meteorology of Ben Nevis."

The Observatory Buildings were erected on the top of the mountain, at an elevation of 4,406 feet—the greatest in the British Islands—in 1883, and were formally opened by Mrs. Cameron Campbell, of Monzie, owner of the western side of Ben Nevis, on October 17, in that year. Shortly afterwards, Mr. R. T. Omond (superintendent), Mr. Rankin (first assistant), and Mr. Duncan (second assistant) went into residence. and on November 28 the regular work of the Observatory commenced. This consists of hourly observations by night as well as by day, and these have been carried on uninterruptedly ever since.

The second number of the Third Series includes the usual report on the meteorology of Scotland for 1884, with tables. But far and away the most important communication in this number is an elaborate paper by Mr. Buchan on the "Rainfall of the British Islands." It is based upon a Table, which shows for 547 stations in Scotland, 1,080 stations in England and Wales, and 213 stations in Ireland, the height above sea-level, the number of years rain has been measured at each station, a specification of these years, their mean annual rainfall, and the calculated mean rainfall for the 24 years—1860–83. From Mr. Buchan's figures, it appears that the only part of Ireland where the average annual rainfall is under 30 inches is a small district around Dublin. This paper is the third of a series by the same author on the Climate of the British Islands. The first and second papers were published in Vol. VI., Nos. 64 to 69, of the Journal of the Scottish Meteorological Society, and were entitled respectively "The Mean Atmospheric Pressure of the British Islands" and "The Mean Temperature of the British Islands." The whole series of papers is one of the first importance to sanitarians no less than to meteorologists.

In the third number of the Third Series, there are no fewer than three papers on the meteorology of Ben Nevis. Mr. R. T. Omond, the Director of the mountain observatory, contributes one of these on the "Winds and Rainfall of Ben Nevis during 1885." Mr. Angus Rankin writes on "Rains and Observations on Ben Nevis," and Mr. Buchan, on the "Meteorology of Ben Nevis for the year ending May, 1886." Other communications of value in this number are by Professor Piazzi Smith, on "Hygrometric Observations," and by Dr. H. R. Mill, on the "Temperature of the water in the Firth of Clyde and connected Lochs." The Report on the Meteorology of Scotland for 1885, with tables, concludes the number.

Fully equal to the foregoing in point of interest attaching to its contents, is number 4 of the Third Series, which has only lately appeared. In it are found the Report on the Meteorology of Scotland for 1886, with the customary tables; a paper by the Hon. Ralph Abercrombie, on "Modern Developments of Cloud Knowledge," and two papers by Mr. R. T. Omond, F.R.S.E., on the "Winds and Rainfall of Ben Nevis in 1886," and on a "Peculiarity of the Cyclonic Winds of Ben Nevis." The Results of the biological work of the Scottish Marine Station are embodied in a paper by the Superintendent, Mr. J. T. Cunningham, B.A., F.R.S.E. This *brochure* cannot fail to interest all zoologists and botanists.

Even from this very incomplete analysis, it will be evident that the Scottish Meteorological Society continues to carry on with efficiency and success the important scientific work in which it has now been engaged for so many years.

4. The "Report of the Meteorological Council" to the Royal Society for the year ending March 31, 1886, is chiefly interesting as affording the most recent information concerning the practical work of the Meteorological Office, London. The Report is, as usual, arranged under three headings—(1.) Ocean Meteorology; (2.) Weather Telegraphy; and (3.) Land Meteorology of the British Isles. The Executive Officers of the Council are as in previous years—Mr. R. H. Scott, M.A., F.R.S., Secretary; Captain H. Toynbee, F.R.A S., Marine Superintendent; and Navigating-Lieutenant C. W. Baillie, F.R.A.S., Assistant Marine Superintendent.

A Manual of Obstetrics. By A. F. A. KING, M.D. Illustrated. London: J. & A. Churchill. 1886. 8vo. Pp. 367.

WE are glad to see a third edition of this capital little text-book. In the preface to this new edition the author states that he has "entirely re-written some portions, and throughout made such alterations and additions as were considered requisite to keep it fully abreast with recent advances in obstetric science." In this he has been fairly successful, but we think the work capable of still further improvement. The all-important subject of the employment of antiseptics is very imperfectly dealt with in a short paragraph at the end of a chapter on puerperal fever. Under the head of

"Examination" it is entirely ignored, and the practitioner is advised to examine the patient "just as he would feel her pulse." Nor amongst the articles which he is recommended to take with him is a single antiseptic agent mentioned. Abdominal palpation is recommended in order to ascertain the "size and shape of the uterus;" but if this were all that could be made out in this way, then version by external manipulation which the author recommends in a later part of the work could not be carried out. It is surely necessary to know the position and presentation of the fœtus, in order to change them intelligently. Upon the whole, however, the work is an improvement upon, and will, we doubt not, prove as popular, as the two former editions.

The Saliva as a Test for Functional Disorders of the Liver. By Samuel Fenwick, M.D. London: Churchill. 1887. Pp. 78.

Dr. Fenwick was led by certain theoretical considerations to examine the saliva, in order to ascertain the quantity of sulphocyanide of potassium contained in it under different circumstances. He makes a standard solution of sulphocyanide of iron, and compares with it the colour of the saliva when treated with a certain bulk of tincture of perchloride of iron and filtered.

He finds that an unusual amount of sulphocyanide is present whenever the necessities of the system call for an increased activity of the nutritive organs, while the quantity is below the normal whenever the digestive organs are unable to supply nutriment sufficient to meet the requirements of the system. Thus, in typhoid fever, we may judge from the quantity of sulphocyanide in the saliva whether the convalescence will be rapid or tedious. In the former case the sulphocyanide will be in excess, in the latter scanty.

In phthisis and malignant disease, particularly cancer of the stomach, the sulphocyanide is below normal. In malignant growths (tumours) which have not impaired the general health, the sulphocyanide is in excess, also in pleurisy and other acute inflammations.

In cases of ascites tapping has often the effect of greatly increasing the sulphocyanide of the saliva.

In the early stages of jaundice the quantity of sulphocyanide present is without importance; but in the later stages, if no colour be developed by addition of a ferric salt to the saliva, we may look for a fatal termination from complete closure of the common duct. In hydatid tumour, heart disease, or other cause, producing only

local obstruction, the saliva may be normal, although the jaundice may have lasted a long time.

In lead-poisoning the sulphocyanide is always very deficient; but when from high living, abuse of alcohol, or indolence, congestion of the liver has been caused, the quantity is in excess.

In cases of mitral disease the sulphocyanide is usually deficient, and increases or diminishes according as the patient improves or grows worse.

It would seem that persons in good health whose saliva is abnormally rich in sulphocyanide are prone to rheumatism.

In chorea the quantity of sulphocyanide is variable and inconstant.

In gout, bilious headache, eczema, and tendency to atheroma of large vessels, the sulphocyanide is in excess.

Dr. Fenwick thinks the sulphocyanide must be derived from the salts of the bile acids. These must, however, enter the duodenum before the sulphocyanide can appear in the saliva.

We have indicated merely some of the most striking and best-established facts in Dr. Fenwick's treatise. The work itself is full of suggestive reasoning and holds out a good prospect of an extension of our means of diagnosis and prognosis in many cases. It is a book that will be sure to meet with the attention it so amply merits.

Sur l'Ontogenèse du Cervelet. Par le DOCTEUR E. LAHOUSSE. Bruxelles: F. Hayez. 1887. Pp. 63.

THIS valuable memoir was presented to the Belgian Royal Academy of Medicine, and is published among its "Mémoires Couronnés et autres Mémoires." The author gives first an account of the structure of the fully developed cerebellum of the fowl, and then traces step by step its development, dividing the process into thirteen stages, extending from the end of the second day of incubation to the eighth day after birth, when the development is histologically complete. The descriptions are clear and succinct, and are copiously illustrated by eight lithographic plates containing eighty-three figures.

It would be impossible for us, in the space at our disposal, to follow the long and elaborate description, nor could it be made intelligible without the figures; but we will only reproduce some remarkable conclusions which the author arrives at as to the relations of the neuroglia with the nerve-cells and fibres. If these

should be confirmed by future observers, they will necessitate a considerable change in our ideas of these structures.

He finds that the original cells of the cerebellum are composed of a finely reticulated protoplasm, condensed at the two poles of an oval nucleus, and united by fine processes with neighbouring cells. The meshes enclose a homogeneous paraplasmic fluid. All the cells of this embryonic neuroglia undergo the same process of differentiation, which consists in the spreading out of the reticulated protoplasma; and it is only after having undergone this process that the cells show differences pointing to different destinies. While some preserve, with only slight change, this primitive stage, and after undergoing cornification form the different kinds of neuroglia, in others the protoplasm becomes condensed and drawn out to form long-felted bands or fenestrated tubes. These bands and tubes represent the fibres of Kühne and Ewald, not yet cornified, and the paraplasm in their lumen soon forms the fibrils of the axis cylinders. This second kind of neuroglia-cell then gives origin to the medullated nerve-fibres. In a third kind of cell the protoplasm also become condensed; but instead of forming longitudinal tracts, the bands are twisted so as to bound vacuoles, and subsequently become transformed into the plexus of medullated fibres which is so characteristic of the layer of granules of the cerebellar cortex.

The fourth kind of cell is lodged in the vacuoles bounded by the twisted processes of those last described. Their reticulated protoplasm is condensed slightly about the nucleus, and sends out processes by which neighbouring cells are connected. These are the embryonic nerve-cells. Their paraplasmic juice becomes transformed into axis-cylinder fibrils, and they themselves develop into the cells of Purkinje. The cells of these four species are in continuity with one another during the entire period of embryonic life. From these facts it follows:—1. That the neuroglia, both central and peripheral, is continuous with the protoplasmic reticulum of the ganglionic nervous cells. 2. That the ganglionic cells are developed from those of the neuroglia, of which they represent a higher stage of perfection. They are composed of the same elements as are the nerves, with this difference—that the fibrils of the axis-cylinders and the fibres of Kühne and Ewald do not run longitudinally, but are felted around the nucleus. A third conclusion drawn by the author is as follows:—3. That the neuroglia, both central and peripheral, is not only a supporting tissue, but

also, in part at least, an important seat of nervous action, and the ganglionic cells are, in respect to this essentially nervous part of the neuroglia, apparatus of co-ordination, condensation, and transmission. This conclusion derives support from the ectodermal origin of the neuroglia; its existence anterior to that of the nerves and cells in ontogenesis, and hence in phylogenesis, since ontogenesis is only the abbreviated recapitulation of phylogenesis; its power of generating nerves and ganglionic cells; and its intimate connection with these latter both in embryonic and adult life.

We would most cordially commend this essay, as a work of genuine merit, to the attention of all those interested in anatomy and embryology.

Monthly International Journal of Anatomy and Physiology. Conducted, with the assistance of numerous other anatomists, by Professors Schäfer of London, Testut of Lyons, and Krause of Göttingen. Vol. V. No. 1.

We would direct the attention of our readers to this valuable Journal, which has now reached its fifth volume. It publishes papers in either English, French, German, Italian, or Latin, and, when necessary, the text is freely illustrated by plates. In the present number there are three papers. The first, under the title "*Qu'est-ce que l'homme pour un Anatomiste?*" is the inaugural address delivered by Professor Testut on taking the Chair of Anatomy in the Faculty of Medicine at Lyons. In it the modern views as to man's place in Nature are put forward with all the brilliancy and point so characteristic of the French orator.

The second paper, by Dr. G. Saint Remy, of Nancy, "*Recherches sur la portion terminale du canal de l'Ependyme chez les Vertébrés*," is a careful study of this still much-disputed subject, and is illustrated by a plate containing 44 figures. This work is incomplete, and will be continued in future numbers.

The third paper is by Dr. Louis M. Petrone, of Turin, "*Sur la Structure des Nerfs Cerébro-rachidiens.*" By special methods of preparation, chiefly hardening in bichromate of potassium, and subsequent staining by nitrate of silver, the author has demonstrated a neuroglia consisting mainly of branched cells in the optic, olfactory, auditory, facial, trigeminal, and glosso-pharyngeal nerves. The figures given in the two plates which illustrate this paper are very demonstrative.

A Manual of Physiology, for the Use of Junior Students of Medicine. By GERALD F. YEO, M.D. Second Edition. London: Churchill. 1887. Pp. 668.

IT is with great pleasure that we draw the attention of our readers to the appearance of the second edition of this book. Professor Yeo's excellent manual has supplied a want which was very much felt by students, and its great success is shown by the rapid exhaustion of the first issue.

In the present edition we notice many improvements. While the general arrangement of the matter is unchanged, in many places the statements have been altered so as to give increased clearness and accuracy, and to make them represent any important advance that has been made within the last few years.

The chapter on the Central Nervous System has been re-written, and the illustrations increased by the insertion of Dr. Bevan Lewis' beautiful drawings of the microscopical structure of the spinal cord and brain of monkeys.

Of all the smaller works on Physiology, Dr. Yeo's Manual is, in our opinion, the best, and as such we most cordially recommend it. We hope that Dr. Yeo will some day give us a more extended text-book for the use of advanced students.

Gout and its Relations to Diseases of the Liver and Kidneys. By ROBSON ROOSE, M.D., F.C.S., F.R.C.P.Ed. Fourth Edition. London: H. K. Lewis. 1887.

In the present edition of Dr. Roose's well-known handbook some additional cases and authorities are quoted, but otherwise there are practically no alterations. Dr. Roose still holds that the first state in the morbid process is functional disease of the liver, an excessive supply of nutritive materials, or a combination of both these causes; that uric acid in the form of sodium urate is the *materies morbi;* that kidney affections and nervous disorders are secondarily produced; that the formation of uric acid takes place throughout the body.

The symptoms and pathology of gout and the various theories as to its nature are fully discussed, the irregular manifestations of the disease are clearly traced out, and the hepatic, renal, and other disorders connected with gout are dealt with.

The chapter on "Treatment" is particularly clear, and the advice given is sound and judicious.

The appearance of four editions in three years is strong evidence that Dr. Roose's work has been recognised as a reliable handbook.

The Commoner Diseases and Accidents to Life and Limb—firstly, their Prevention; secondly, their Immediate Treatment. By M. M. BASIL, M.A., M.B., C.M. Edin. London: J. & A. Churchill. 1887. Pp. 104.

A SINGLE lecture delivered before a mixed audience of men and women is here expanded into ten short chapters, all the accidents and emergencies of every-day life in a manufacturing town being dealt with. As a rule, the description of the conditions needing assistance and the advice concerning treatment are guarded and accurate. Occasionally the author goes a little too far, as in the following paragraph, which treats of choking during meals:—

"The very old, the feeble, the paralysed, the epileptic, the young, those who bolt their food rapidly, or people of a very excitable or jerky disposition, are liable to this accident, although it may occur in any individual. It is therefore necessary that such persons should never be allowed to take their meals alone. . . . . The process of swallowing in such people ought to be watched, and if any difficulty or hitch has occurred, we must anticipate danger, and in the future keep them on fluid or minced diet."

The amount of watching required by all the classes enumerated would be considerable, and the result on the nervous would probably be to greatly increase their danger. The punishment for an occasional "hitch" seems rather too severe.

The experience of the author seems to have been unusual. He writes:—

"When a patient has swallowed a hard object, you should never induce sickness unless you are ready to open the windpipe. The object may come up from the stomach, and on its way forward slip down into the windpipe."

Also in speaking of food for children hardly a year old, it is rather sweeping to write: "Biscuits, rusks, and other rubbish of the same class;" and it is a decided exaggeration to add, "the child might be expected to thrive equally well on the poker or fire-shovel."

One danger of paraffin lamps is emphasised in a verse, probably of American extraction:—

> "Mary had a little lamp,
> 'Twas filled with kerosene,
> She blew right down the chimney,
> And vanished from the scene."

but nothing is said of the advantage of metal reservoirs and self-extinguishing lamps.

The last chapter has apparently appeared somewhere else, as it, alone, has marginal sub-headings.

The Management of Pregnancy, Parturition, and the Puerperal State, Normal and Abnormal. By Paul F. Munde, M.D. Crown 8vo. Pp. 110.

Dr. Munde having been asked by Messrs. Lewis to compile a work on obstetrics within the compass of 110 pages, has accomplished this extraordinary feat with as much success as circumstances would permit. It is quite evident, as the author himself remarks, that a monograph of this kind can contain but the merest outlines of the subject mentioned in the title. These outlines, however, meagre as they are, are exceedingly good, and we only regret that he has been so terribly cramped for room.

Bibliotheca Medico-Chirurgica, Pharmaceutico-Chemica, et Veterinaria. Herausgegeben von Gustav Ruprecht. 40 Jahrgang. Neue Folge, I. Jahrgang. Neue Folge, II. Jahrgang. 1 Heft. Januar–März, 1887. 2 Heft. April–Juni, 1887. Göttingen: Vandenhoeck und Ruprecht's Verlag. 1887. Crown 8vo.

Messrs. Vandenhoeck and Ruprecht, of Göttingen (Germany), publish quarterly the *Bibliotheca Medico-Chirurgica*, edited by Gustav Ruprecht, a valuable medical bibliography. This medical index, now in its forty-first year, records, in each part, the titles of *all* new publications on Medicine, Surgery, and the collateral branches, published during the preceding three months all over the civilised world. These are classed under subject-headings, and are followed by the titles of valuable original articles upon the same subject, found, during the like period, in medical journals. At the close of each yearly volume an alphabetical index is added.

The *Bibliotheca* is probably unparalleled in cheapness and com-

pleteness, and is indispensable to every scientific worker. Vol. XL. (for 1886) consists of four quarterly numbers, of 400 pages, crown 8vo. The first and second quarterly numbers of Vol. XLI. (Jan.–March, and April–June, 1887) contain 192 pages, crown 8vo, nicely printed. The annual subscription (if paid in advance) is 5s. only. Each quarterly number is delivered immediately after publication, post free, by the publishers. It may be procured also from all foreign booksellers.

RECENT WORKS ON EPIDEMICS.

1. *The Volcanic Origin of Epidemics.* By John Parkin, M.D., F.R.C.S., formerly H.M.'s Inspector for Cholera in the West Indies. Popular Edition. London: Sampson Low, & Co. 1887. 12mo. Pp. 146.

2. *Cholera and Water in India.* By M. C. Furnell, M.D., F.R.C.S., C.I.E., Fellow of Madras University; late Surgeon-General and Sanitary Commissioner, Madras, &c. London: J. & A. Churchill. 1887. 8vo. Pp. 45.

1. The late Dr. Parkin, we are told in the preface to this book, had devoted his long life to the study of epidemics in general and of cholera in particular; and this volume, containing his maturest views, is his legacy to the profession. He soon came to the conclusion that the cause of cholera "was atmospheric, and that carbonic acid gas was its antidote." In 1834—we quote again from the "Editorial Note," or preface—"he had the opportunity of putting his theory to a crucial test, and on a large scale," and "the result was conclusive." In 1850, his success in the treatment of the disease in the West Indies "was so notorious, that when in the following year it again appeared, he was offered the post of Her Majesty's Medical Inspector in the West Indies." And yet we, who have been deeply interested in cholera for many years, have to confess with sorrow that we never heard of Dr. Parkin or his theory until now. In Southern Europe, we learn, his views obtained the "abundant recognition" denied him in his own country; and there the efficacy of his methods of cure has been fully admitted. His comparative failure to obtain a hearing in England is attributed partly to indifference, partly to "an erroneous notion that the results of his teaching were hostile to sanitation."

For this "erroneous notion," it must be confessed, there was

some excuse. The cause of cholera being atmospheric, the obvious prophylactic is the avoidance of external air. In the West Indies females suffer more than males, because they work in the open air, while their "lords and masters—the lazy, good-for-nothing negroes—lay skulking at home." In the East women suffer less, because they stay in their houses—*ergo*, &c. "Captain Claridge, author of a work on Hydropathy," tells how once, at Avignon, a medical man ordered windows to be opened, and cholera immediately flew in. And yet, in 1865, the medical officer of the Privy Council, issuing instructions on the approach of cholera, recommends "ample ventilation;" and Miss Nightingale advises that windows should be opened even against, or at least without, the doctor's order! The true teaching is "not only should the windows of private houses, but those of hospitals also, be kept shut during the prevalence of epidemic diseases." Though, however, epidemics blow in through open windows, on the wings of the ventilating breeze, we are told (p. 19) that "they have been known to progress in the face of a strong monsoon."

According to Dr. Parkin, volcanic action is the *fons et origo malorum epidemicorum*, and we must refer the curious reader to the book itself for proof, ourselves remaining unconvinced. Cholera, unfortunately, will not quite fit in; and we are told that if its epidemic route follows the line of volcanic action—as it ought to do, *ex hypothesi*—it is a line on which "no indication of volcanic action had been observed previously in several of the countries passed over by the epidemic." Again (p. 123), "as regards the epidemic cholera, we have no direct proof at present that it has progressed along a line known to be, or considered to be, volcanic, with the exception of a small portion of this line."

Dr. Parkin's legacy does not help us much.

2. Surgeon-General Furnell's pamphlet is a reprint of parts of a lecture on "Cholera and Water in India," delivered to a native audience in Madras in 1882; and of a letter addressed to the Government of Fort St. George in 1885, when Dr. Furnell was sending in his last Annual Report as Sanitary Commissioner.

The lecture was most effective. It was translated into ten Indian vernaculars, was widely circulated, and did excellent work in the cause of sanitation. To the letter we desire more particularly to call the attention of our readers. It collects some striking instances—old and new, eastern and western—of the communica-

tion of cholera through foul water, which should be known to every medical and sanitary officer. In the short preface, Dr. Furnell severely condemns the attempts which were persistently made to force Dr. Cuningham's pernicious "local influence" and "non-communicability" crotchets upon the Indian medical services. Pressure and prestige fortunately failed; and Dr. Cuningham's views have not proved so readily communicable as the disease which they would have helped to spread. Let us conclude with a caution. Water may be, probably is, the usual medium by which cholera is propagated; but it is not the only one, and attention to purity of water-supply must not exclude other preventive measures.

Debate in the House of Commons on the Grievances of the Indian Medical Service. Verbatim Extract from *The Times* of 19th July, 1884. Pp. 15.

While the present Parliamentary deadlock lasts, we fear that the grievances of our brethren of the older Indian Medical Service, like grievances more general and greater than theirs, must remain unredressed. Unfortunately, while many or most of the latter can wait, the classes which they affect being permanent and continuous, it is not so with the senior members of a service unequalled in the work it has done during its long and honourable existence, and in the spirit and success with which it has wrought. For them time presses. Each year as it passes sees some of these gentlemen sinking into the gulf of superannuation—under rules imposed since their entry into the service—defrauded of the promotion which was their due. More than three years have now elapsed since in the debate, of which a report is now before us, "the House practically decided that 'a case of great grievance and hardship had been established in regard to the members of the Indian Medical Service, and also as to the almost hopeless condition of their case as regarded promotion;'" and since the Under-Secretary of State for India promised "utmost consideration." Not a finger has been moved, the promise notwithstanding. We sympathise deeply with our brethren, and would gladly aid them in their struggle for justice if we could. All we can do we do. We give all the publicity at our disposal to the facts of the case, so far as the Bengal Medical Service is concerned; and from them the similar condition of the other two services may be inferred. The two officers last pro-

moted to administrative rank in the B. M. S. (in June and September, 1886) had served over *thirty years*, and even these were "selected" at the expense of several superseded seniors. In October and November of this year *two* promotions were expected, and *thirty-four* members of the old service—21 Brigade Surgeons and 13 Surgeons Major—will then await promotion, which few of them will ever see. Of these officers 12 have served for more than 30 years, 4 for over 29, 5 for over 28, and the youngest, or rather the least senior, over 27.

These disappointed gentlemen ask for little. In the words of a memorandum with which we have been favoured:—

"The offer of a moderate Bonus, with pension calculated according to length of service, would not only be an act of tardy justice to these men, debarred from promotion and the higher rates of pension by the abolition of administrative appointments guaranteed by the Government of India Act, but would also result in *a substantial saving to the Indian Treasury.*"

Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. Authors and Subjects. Vol. VIII. Legier-Medicine (Naval). Washington: Government Printing Office. 1887. Quarto. Pp. 1078.

THE eighth volume of this work, which we have so often noticed in terms of approbation, includes 13,405 author-titles, representing 5,307 volumes and 13,205 pamphlets. It also includes 12,642 subject-titles of separate books and pamphlets, and 24,174 titles of articles in periodicals.

The present volume opens with the first addition to the alphabetical list of abbreviations of titles of medical periodicals published in the seventh volume of the Index-Catalogue. The entries begin with "LEGIER (J. G. J.). Quelques considérations sur les Fièvres intermittentes. 20 pp. 4°. *Paris*, 1812, N°· 139, v. 92," and end with "MEDICINE (*Naval*)." We may assume, therefore, that Surgeon John S. Billings has now accomplished more than half of the herculean task he has undertaken. That he may be enabled to complete it in continued health and strength is our earnest wish, in the interest of Medical literature all over the world not less than in that of American Medicine and the Medical Department of the United States Army.

PART III.

HALF-YEARLY REPORTS.

REPORT ON MIDWIFERY AND DISEASES OF WOMEN.

By Andrew J. Horne, Fellow and Examiner in Midwifery, King and Queen's College of Physicians; ex-Assistant-Physician to the Rotunda Hospital, Dublin.

CONCERNING THE ADVISABILITY OF SEPARATING, IN POINT OF TIME, VERSION FROM EXTRACTION (WINTER[a]).

This question, which is of so great importance to every practitioner, has been engrossing the attention of the profession ever since Hofmeier and Lomers' paper on the Treatment of Placenta Prævia appeared. Winter,[a] in his paper, refers only to podalic version by either internal or combined manipulation, and takes no notice of cephalic version, or of version by external manipulation.

Until about the beginning of the present century, the term "version" was generally used as including the two steps of turning and extraction, as these were always united in the one operation. Then it began to be recognised in obstetrical writings that footling presentations may terminate naturally, and that in these cases the prognosis is better than when extraction is employed. With the recognition of this fact it was strongly advised to leave footling cases (natural or artificial) alone. This teaching, strongly supported by Scanzoni and Naegeli, is still the one most generally accepted.

Winter examines this method of procedure in the light of 310 cases of transverse presentation, selected from the records of the clinic and polyclinic in connection with the University of Berlin.

In order to keep the question within narrow limits, he selects cases of uncomplicated transverse presentation, in which the children were at full time and alive at the commencement of labour, leaving

[a] Zeitschrift f. Geburtsh. und Gynæk. Vol. XII., p. 153.

out all the cases in which other abnormal conditions existed, such as placenta prævia, contracted pelvis, &c.

It is generally believed that any delay in turning in these cases, after the membranes have ruptured, may produce two evils—(1) the intra-uterine death of the child; (2) increased difficulty in turning. The author does not believe that the early escape of the waters is in itself harmful to the child. In support of this opinion, he cites seventeen cases (out of 203 in which the membranes ruptured early) where the child lived from six to eighteen hours after the escape of the waters. He points out that entrance of air into the uterus may occur in these conditions, and advises that the patient should be kept quietly on her back, in order to avoid this accident, which is so fatal to the child. He refers to the further risk of fever occurring during labour, but thinks that the risk is slight, since elevation of temperature occurred in only five out of 310 cases. The condition of inertia uteri, which may arise, offers in itself no danger to the mother or child. On the other hand, strong uterine contractions are dangerous to the child, and still more so is the occurrence of tetanic contractions. This latter condition is almost always due to causes which may be avoided, such as the exhibition of ergot, or ineffectual efforts at turning.

Winter then examines in detail the factors which cause difficulty in turning in uncomplicated transverse presentations, in order to decide whether these are likely to arise from delay. These factors are three in number, according to Lahs, Baudl, and Hofmeier, viz.:—(1) The so-called passive contraction of the uterus; (2) tetanic contractions; and (3) stretching, and even rupture of the cervix, caused by impaction of the abnormal presentation. The first of these factors was present in about fifty of his cases, and in none was there any serious difficulty in turning when the patient was narcotised. The second factor may render version difficult, and even impossible, but the author believes that it is due in every case to certain definite causes which may be avoided. Impaction of the presenting part never occurs in the stage of dilatation when the pelvis is of normal size, and danger of her cervix being seriously stretched arises in most instances in the stage of expulsion. The division, however, between the two stages in transverse cases where the membranes have ruptured early is by no means marked. In these cases the os does not dilate fully, but there is usually left a border, about the breadth of the finger, which hinders neither version nor extraction. It is, therefore, necessary to be ready to seize

the proper time for turning, as dangerous thinning of the lower uterine segment, and impaction of the presenting part, may occur very quickly after dilatation of the os.

On all these considerations the author thinks the doctrine no longer tenable, that in cases of transverse presentation, apart from other complication, version must be performed as soon as the diagnosis is made, even though the os be but slightly dilated. His principle is to turn when the os is well dilated, and then to proceed to extraction at once.

He believes that this method is the safest for the child, and in support of it he gives the following statistics:—233 cases of version with dilated os, followed by immediate extraction, gave 5 still-born children, or about 2 per cent.; 27 cases of version with narrow os, followed by spontaneous delivery or extraction, after a time gave 13 still-born children, or about 50 per cent. In the latter class of cases the child's death is usually intra-uterine. The cause of the fœtal deaths are chiefly accidents to the funis, entrance of air into the uterus, and detachment of the placenta, caused directly by the hand, or indirectly by the partial emptying of the uterus.

As indications for version at an earlier period, the author recognises—(1) placenta prævia; (2) prolapsus funis; (3) commencing infection during labour; (4) commencing intra-uterine asphyxia of the child; (5) marked thinning of the lower uterine segment; and (6) pure uterine inertia when other means have failed to rouse the contractions.

PERI-UTERINE HÆMATOCELE.

In the *Archiv. f. Gynäk.*, Band 29 Heft. 3, Gusserow (A), has an interesting paper on eight cases of hæmatocele, in which active treatment was adopted. The cases are recorded at considerable length.

Case I. Tumour reaching as high as the umbilicus, and bulging the posterior fornix of the vagina so as to press the uterus firmly against the symphysis. Great pelvic pain, but no rise of temperature. The sac was incised through the vagina, its contents cleared out, and a drainage tube inserted. Marked improvement of symptoms and diminution of the tumour followed. The patient being allowed to get up, the pains suddenly returned, the tumour refilled, and the temperature rose. As the vaginal incision did not allow the contents to escape, an incision was made in the linea alba, the wall of the sac was stitched to the abdominal wound and opened. The contents, consisting of blood and pus, were allowed to escape,

and a drainage tube was thrust through the pouch of Douglas into the vagina. Five weeks afterwards both incisions had healed, the uterus was in normal position and freely movable, and only a small exudation could be felt on the left side.

Case II. Two round swellings lying close to the uterus. The swelling on the right side was small and movable, and was felt soon after the patient's admission; that on the left side was about the size of a fist, and suddenly appeared a fortnight after the other one was first observed. An incision was made in the left vaginal fornix, and the finger was pushed into the swelling. A quantity of dark blood escaped, and some coagula were removed with a blunt curette. The edges of the sac were stretched to the vaginal incision, and a drainage tube was inserted. Recovery was rapid and complete.

In the five remaining cases the treatment and result were the same as in No. II., with the exception of No. VIII., in which convalescence was delayed for some weeks by a slight attack of parametritis.

Numerous observations have proved that extra-peritoneal hæmatocele (hæmatoma of the broad ligament), although not so common as the intra-peritoneal form, is by no means unknown, even apart from the puerperal period. Case II. was undoubtedly extra-peritoneal. On abdominal examination the hemispherical upper border of a hæmatoma of the broad ligament is distinctly felt; while per vaginam it is often difficult to feel any swelling. In intra-peritoneal hæmatocele, on the other hand, the upper limit is only recognised after the pouch of Douglas is well pushed down and the pelvis more or less filled. The lateral position and some degree of mobility are characteristic of effusions in the broad ligament, especially in the early stages.

As regards the causation of peri-uterine hæmatocele, Gusserow admits that it may arise from tubal pregnancy, but thinks this cause is not so frequent as some suppose. In four of his cases it was suspected from the history that this might have been the cause of the effusion, but in none of these was the least trace of an ovum discovered, although the contents of each sac were most carefully examined.

In discussing the treatment of hæmatocele, Gusserow thinks that the expectant method will still remain the more suitable for a large number of cases; but on the other hand, he believes that the number of cases treated by incision will be greatly extended.

The fear of septic infection, and the belief that refilling of the sac is apt to occur, have deterred many from operating. Both of these fears are shown by the author's cases to be groundless. Septic infection may be avoided by the observance of strict antiseptic precautions, and if the sac be opened at the right time, and its contents washed out gently with a stream of water—not scraped out with a curette, as some recommend—there is little danger of it refilling. Method: The operation in every case was preceded by a careful douching of the vagina with sublimate solution (1 in 2,000), then the lowest part of the swelling was incised with a lance-shaped knife, and the wound enlarged as far as necessary. The contents of the sac were washed out by means of a catheter, a solution of salicylic acid being used. If there was a distinct cyst wall it was stitched to the original incision, so as to cause the opening to gape. After the sac was emptied as far as possible, a thick drainage tube was inserted and the vagina packed with iodoform gauze. The cavity was washed out once or, at most, twice daily. The operative treatment of hæmatocele by laparotomy appears to the author unnecessary.

EXTIRPATION OF A LARGE LYMPHO-SARCOMA OF THE NECK, WITH SECTION OF THE COMMON CAROTID AND INTERNAL JUGULAR VEIN.

Dr. Iginio Tarisini, of Lodi (*Gazzetta Medica Italiana, Lombardia*), reports a case of a large lympho-sarcoma which occupied the left side of the neck, in a weaver, aged sixty years. The tumour overlay and surrounded all the deep tissue of the neck, on its own side, and extended back to the spines of the cervical vertebræ, and reached from the skull to below the clavicle. Dissecting the tumour from the vessels was a work of great difficulty, and when the carotid and jugular vessels were found to be diseased a ligature was placed on them and they were cut. The internal and external carotids had also to be ligatured. Two days after the operation the patient suffered from paralysis of the right side, together with difficulty of speech. These symptoms were believed to be due to venous congestion, caused by ligature of the jugulars, and deficient *vis à tergo*, on account of the ligature of the carotids. With rest, bleeding, and the use of defervescents, the patient made a good recovery.

THE INSANE IN ITALY.

In the Peninsula there are thirty-two asylums for the poor, in which 18,000 patients are cared for, at an expense to the State of six millions of francs.—*Gazzetta degli Ospitali*, No. 2.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—Robert M'Donnell, M.D., F.R.S.
General Secretary—W. Thomson, M.D.

MEDICAL SECTION.

President—James Little, M.D.; President of the King and Queen's College of Physicians.
Sectional Secretary—A. N. Montgomery, M.K.Q.C.P.

Friday, December 16th, 1887.

The President in the Chair.

Argyriasis.

Dr. A. W. Foot, *àpropos* of the discussion in the *Brit. Med. Jour.* of absorption of silver nitrate applied to the throat, read notes of a case in which the solid caustic had been applied to the throat for eight years, and was followed by silver-staining of the skin and mucous membranes. A highly-finished drawing of the patient was exhibited. He had no doubt that large quantities of the silver nitrate had been swallowed. Referring to the biological action of silver, he recommended as preferable to the silver nitrate the double hyposulphite of sodium and silver as free from the danger of producing argyria while effecting all the therapeutical indication of the silver salts.

The President said Dr. Foot had shown that the frequent local application of nitrate of silver might produce what to the patient was life-long trouble.

Mr. Fitzgibbon mentioned two instances of discoloration of the skin produced by the continued application of nitrate of silver to the throat, but he had no doubt the discoloration was due to the solution having been swallowed. It never occurred to him that the characteristic dis-

coloration would be produced by the local application alone to the surface of the body as to an external ulcer. He attributed it to the effect of light upon the white chloride of silver as in photography. Iodide of potassium was a means of eliminating mercury from the system, and therefore would assist in the elimination of the oxides of mercury from the skin. The drug had been used with marked though not complete benefit in removing the discoloration.

Dr. Head said he knew a lady who, suffering from vaginitis, was treated with nitrate of silver by injecting a drachm of 30 gr. solution into the vagina, and in two years she became quite skin-stained.

Dr. Duffey pointed out that a case had been recently reported in which the local application of nitrate of silver to an ulcer on the leg was followed by discoloration of the skin.

Mr. Story said the local application of nitrate of silver to the conjunctival sac, which was a common procedure some years ago, had often produced very deep discoloration, turning the whites of the eyes quite black, but he did not know whether there was general discoloration produced by local application.

Dr. Ball asked as to silver found in the liver and kidneys, how its deposit there was to be accounted for by the action of light.

The President observed that Dr. Head had disposed of the theory that staining was entirely due to swallowing the fluid.

Dr. Foot, in reply, said the silver deposited in the liver, kidneys, spleen, and viscera, was metallic silver in the oxidised or reduced form, and was indifferent to light.

Cerebral Tumour.

Dr. Kendal Franks read a paper on a Case of Cerebral Tumour. [It will be found at page 97.]

Mr. Wheeler said:—On the 6th of October last a near connection of this patient wrote to me, asking me to arrange a consultation with Dr. Franks the next evening. As I was unable to go at the desired time, I was further requested by the same relative, on the 8th, to see the patient by myself the following day, who stated that it was at Dr. Franks' request. As he would not see the patient until late next evening, I wrote for and received the following history of the case from her husband:—

The patient was in very good health up to the end of June, 1887, when the weather being very hot, she felt it much. One morning she was out under hot sun, but walked a mile and a half in the afternoon; was well up to 7 30 p.m. Shortly after she was found lying in her room insensible; face much flushed, extremities cold, pulse feeble; remained unconscious for several hours, and then awoke perfectly clear in her mind. There was a slight scratch on her forehead, but no appearance of a bruise.

For some weeks attacks somewhat similar recurred, preceded by confusion and a sensation of falling. After a short period her speech always became confused; she knew what she wished to say, but could not use the right words, nor could she write a letter. Subsequently violent pain in head, with vomiting, came on. She fell into a semi-conscious state about three months from first attack, then perspiration set in, and she lost control over bowels and required to have the urine drawn off.

I found the patient in a semi-conscious state; saliva dribbled from her mouth, her gums were spongy, and there was a well-marked mercurial odour; pulse 96, but rose to 110; respiration under 24; temperature under 100° F.; could swallow fluids; no stertor; her pupils responded to light; some urine drawn off; sp. gr. 1018, no albumen. I made an ophthalmoscopic examination, but was unable to detect any neuritis; reflex tests gave no indication except abdominal and mammary; heart sounds normal. I advised, in writing, even then as a last resource, an operation in Broca's region, and stated that in my opinion there was a fluid collection, probably an abscess, and that if a solid tumour existed which had been diagnosticated it would not be impossible to remove it. The *post-mortem* showed there was a clear serous collection, separated from surface by a thin layer of healthy brain tissue, but there was no evidence that pus cells did not exist. I was then requested to meet Dr. Franks at 9 40 p.m. After a few minutes' conversation, he stated that Dr. Head's opinion, with which he agreed, was that the patient suffered from a tumour, and as he dissented from the operation, I proposed that we should see the patient. Her pulse was then over 150, temperature 102·6°, respiration nearly 40. She could not swallow; her pupils did not contract to light. I stated that she was so altered from the time I first saw her that I could not then recommend the operation.

There was clear evidence to me that this patient was suffering from aphasia, agraphia, and amnesia, with every indication for operation in the region of Broca; and my opinion is that had she been operated on in time at the site indicated, the cyst could have been emptied, and probably her life saved, for the anterior edge of the cyst would be scarcely three-quarters of an inch from the site of the advised operation; there could be no difficulty in tapping it at even a greater distance, for scarcely two and three-quarter inches of the temporal lobe is posterior to Broca's region; but supposing it could not have been emptied by proposed operation, the correct treatment was to trephine a second or third time, and make explorations as often.

Dr. Head said he saw the lady for the first time late on the evening of the 14th of September, and not being anxious to express a definite opinion without a further examination, he saw her again on the following morning. He had seen several cases in his practice resembling this one in many ways. In two of those cases the tumours were such as it would

have been utterly impossible to remove, even if it were known where they were. Therefore, having regard to his experience, he thought it would be inadvisable to trephine over Broca's space to look for a tumour the locality of which was doubtful, and he accordingly advised Dr. Franks not to operate. If the tumour became localised, or evidence of its locality more clearly defined, then the operation might be performed. When he saw the patient again on the 3rd of October she was in a comatose condition, and the symptoms had not developed to enable him to localise the tumour. She was suffering intense pain, but he did not like to give opium, so suggested cannabis indica. She expressed herself greatly relieved. He suggested a caustic issue, and that the mercury should be given tentatively, but stopped if untoward symptoms arose. It was stopped on the 22nd of September. On the 3rd of October he examined her breath and gums, and she had not the smallest sign of mercurialisation. She had bad teeth, but there was no salivation, and there was not the smallest sign of mercurial fœtor. Cannabis indica, she herself said, relieved her pain. So he did not see how that treatment could have done her much harm. With all the care he gave the case he could not attempt to localise the position of the tumour, or diagnosticate whether it was solid or fluid, except the probabilities being that it was on the left side. Under these circumstances he advised Dr. Franks not to operate.

Mr. Swanzy said he was asked to see the lady in order to ascertain whether, by means of the ophthalmoscope any other symptoms could be discovered from which a closer diagnosis could be made than had been effected. He examined her with the ophthalmoscope under considerable difficulties, and expressed an opinion that there seemed to be a slight haze over the fundus, which meant an optic retino-neuritis. At the same time, it was so very slight he could not lay much importance upon it. Whatever appearance there was, it was in one eye quite as much as in the other. The lady complained of not being able to see people who stood on the right hand side of the bed. He further examined to see whether this was due to any blindness in the right eye. So far as could be ascertained by covering one eye and then the other, and by counting the fingers the sight of one eye seemed to be as good as that of the other. Still she complained of an unpleasant sensation and difficulty of moving the right eye to the right side, indicating a little paresis of the external rectus. He understood there had been a little drooping of the left upper lid, but when he examined her there was nothing of the sort. There was nothing enabling one to localise anything in the brain. If there had been any optic neuritis it would not localise the lesion in the brain; it would confirm the diagnosis already sufficiently made—that of a tumour of the brain.

Dr. Bewley, who made the *post-mortem* examination, supplemented his report. Sawing round the skull in the ordinary manner, the saw suddenly passed through the bone behind the left ear and some clear

serous fluid came out from a point above and a little behind the left ear. The membranes of the brain were found perfectly healthy. The cyst was situated in the temporo-sphenoidal lobe, its nearest point one and a half inches from the anterior rim to the fissure of Sylvius. The other parts of the brain, as far as he could make out, were perfectly healthy.

Mr. Fitzgibbon said it seemed that Dr. Franks and Dr. Head had expressed an opinion against trephining in this case, in which they were both satisfied there was an intracranial tumour of some sort, because the symptoms did not point definitely to any circumscribed portion of the brain, although they had the best guide a surgeon could have to the seat of the disease—namely, localised pain on the side of the head—pain sufficiently localised to recommend blisters to a particular spot. In his opinion the surgeon was bound to trephine to give the patient a chance. He had seen his colleague, Mr. Wheeler, pierce the temporal lobe in a patient two or three times and evacuate an abscess.

Mr. Foy thought there had been a mistake made in Dr. Franks' case in waiting for symptoms. The amnesia was well marked, and the rule laid down by Ferrier for the localisation of functions indicated trephining—an operation which was not dangerous. In his opinion there was much valuable time lost when there was quite enough to guide.

Dr. C. J. Nixon said three points occurred to him as arising in the case. First, there was the nature of the case itself. As far as he could judge from the history and symptoms, it seemed to be a case of apoplexy; and the tumour, if that was a correct term to apply to what was found *post-mortem*, was nothing more or less than an apoplectic cyst. There was no evidence to show that it was one of those rare cases of cystic tumour of the brain. In consequence of the hæmorrhage in the white substance of the temporo-sphenoidal lobe she had epileptiform lesions. In his opinion much good was not likely to be done by withdrawing the cyst. Secondly, with regard to the question of localisation, a good deal had been said about aphasia. In many instances sufficient attention was not given to the forms of aphasia, which were valuable in the localisation of cortical lesions. There was nothing in this case to show whether the form of aphasia was ataxic aphasia, the only form associated with Broca's convolution, or a case simply of amnesia, where considerable disease might be found in the sensory portion of the brain. He would not attach much importance to a patient, suffering from such symptoms of cerebral pressure as to have involuntary discharge of fæces and urine, being unable to recollect certain words. He was unable to gather from the symptoms recorded that the case was one of aphasia at all, either of the amnesic form or the ataxic. There was no record of deafness such as would be expected from the existence of the tumour supplied by the *post-mortem* examination. Thirdly, there was the question of operation. Even assuming this was not an apoplectic cyst, and that it was rightly described as a tumour,

was the portion of the skull that corresponded to Broca's space to be the point of selection in which all trephining operations were to be done; and were they to subject every patient who simply had a pain in his head and had some difficulty in recollecting certain words to have his skull trephined in Broca's convolution? Where there were special forms of aphasia which could be differentiated, operative procedure was warranted, and undoubtedly the surgeon did good; but except the lines were definitely marked to localise the lesion and indicate a certainty of reaching it, it was unsurgical and unscientific to trephine and probe a patient's brain in different directions because he happened to have a pain in his head and difficulty of speech. A year ago he had a very interesting case showing the most distinct symptoms of brain tumour, and these symptoms subsided altogether unaccountably, without operative procedure being attempted.

Mr. A. H. Corley (President of the Royal College of Surgeons, Ireland) said, if a question of this sort could be killed by ridicule, Dr. Nixon had done his best to kill it. He had suggested that surgeons would trephine merely for a pain in the head. Well, he would be sorry to listen to such a suggestion without contradicting it. He did not think that any surgeon would trephine where there was a chance of the patient getting well by any other means. In the case under discussion there was considerable difference of opinion between the gentlemen who saw the patient first and the gentleman who saw her afterwards. The symptoms were tolerably plain, pointing to injury at Broca's convolution, and when the patient had no other hope of recovery the proposal was to investigate Broca's convolution and relieve the patient of the pressure. The *post-mortem* examination showed it was more of the pressure suggested by Mr. Wheeler than that suggested by Mr. Franks and Dr. Head, and the conclusion was obvious that if the pressure of the fluid had been taken away the patient would have got the only chance she had of recovering. The question of trephining had brought to his mind a remarkable case published in the *American Journal* by an old Dublin student, Dr. Lee, of Chicago. It was a case in which trephining was done to reach an abscess, and it was afterwards published by himself and his partner. The introductory words were apposite to the present, viz.:—"A number of cases are on record in which a correct diagnosis had been made, the trephine put on more or less at the right place, but the knife or trocar, the instruments usually employed for the purpose, passing into the brain and near the walls of the abscess, nevertheless missed it. We intend to show by the following case that this difficulty can be obviated by multiple exploratory aspirations performed at intervals sufficiently small to prevent any abscess from escaping detection, even if the trephine opening should not have been made at the point of the skull nearest the abscess." In the particular case they

aspirated five or six times, the needle passing in four inches. They got the matter out and the patient recovered. In the case under discussion, as far as he could judge, the diagnosis made in the first instance was fairly correct, but the diagnosis went nearer the mark in the second opinion. They knew the result of non-interference in the case. With interference a different result would probably have been obtained. The weight of evidence was rather in favour of interference than of non-interference.

Mr. Broomfield desired to put a question or two arising in Mr. Franks' statement that there was little or no evidence that Broca's lobe was implicated, and therefore that trephining over that area was not good surgery; and secondly, that if trephining were to be done at all it should be over the angular gyrus and first temporo-sphenoidal lobe. Without dwelling upon what the results of operation might have been, beyond expressing his opinion that, so far as he could see, they might have been very favourable, he contended there were many good and scientific grounds for believing Broca's lobe to be implicated in preference to any other part of the brain. They were taught to believe from experiments that Broca's lobe was the seat of speech, and that injury to it produced loss of memory for words, described as amnesic aphasia; also that the convolution immediately behind this—namely, the lower part of the ascending frontal convolution—presided over the motion of muscles supplied by the seventh nerve. Here, then, they had a case in which two of the most prominent symptoms were amnesic aphasia followed by paralysis of some muscles supplied by the seventh nerve—the muscles of the soft palate, &c. This would go far to prove that the lesion, having first attacked Broca, extended to its next neighbour (the area of the seventh). As to Mr. Franks' quotation from Dr. Ross about the area of aphasia including the supra-marginal, angular, and temporo-sphenoidal convolutions, Mr. Franks seemed to ignore the fact that the weight of experimental evidence led to the presumption that if the angular gyrus were affected, the form of aphasia would not be amnesic, but a form described as "word blindness" (*cæcitas verbalis*), in which the patient would have lost the power of understanding written characters and appreciating objects; and likewise, if the temporo-sphenoidal convolutions were implicated, the result would most probably be deafness, or at least word deafness (*surditas verbalis*), or want of power to understand spoken language. The case did not present any history of the latter, while there was evidence that the patient did not suffer from "word blindness," she being able to play music from notes. In face of these facts, he asked Mr. Franks to explain why he would not operate at all over Broca, and, above all, if he assented to an operation, why he should select the angular gyrus, towards which region not one symptom pointed?

Mr. Myles said that there were two points of interest—first, the pos-

sibility of reaching the tumour; and secondly, the justifiability of operating. Nobody acquainted with the anatomy of the brain would hesitate to say that it was quite possible to explore every inch of the temporo-sphenoidal lobe. It was obvious that an incision over Broca's lobe would place the tumour well within the reach of the operating surgeon. Mr. Franks had stated that it could not be evacuated successfully. It might not be, but it would have been found, and once found what would have hindered any surgeon evacuating the tumour by a syringe?

Mr. M'Ardle said that the mortality in cases where no defined tumour was found was almost 100 per cent., and even where the tumour had been found, the mortality reached 95 per cent.

Mr. Heuston said the answer to Mr. Broomfield's objections seemed to him to be this—that there might have been a mistake made in saying there was amnesic aphasia; but undoubtedly both Mr. Franks and Mr. Wheeler believed there was, while Dr. Nixon did not. Then Mr. Franks acted upon that amnesic aphasia as strong evidence of a tumour being situated, not in the anterior, but in the posterior, portion of the brain. There was another symptom not touched on, which Mr. Franks laid greater stress on—namely, the paralysis of the soft palate. Paralysis of the soft palate pointed to paralysis of the facial nerve; but the facial nerve presented no evidence of paralysis, and consequently he had no other way of regarding paralysis of the soft palate than that it was in connection with certain branches of the facial nerve—that is to say, those branches which supply the palate. It was evident, then, looking at the paralysis and the lesion not being central, pressure was cast on the petrous portion of the temporal bone. With respect to the operation performed, a good deal of stress was laid on Ferrier's areas. If the tumour were opened the instrument should be passed downwards and backwards through Broca's convolution, through the fissure of Sylvius, into the temporo-sphenoidal lobe. He would not care to be the surgeon who would pass the instrument five or six times through the fissure of Sylvius, knowing the veins and arteries that exist there.

Mr. Barton thought the plain issue was whether or not the symptoms which had been detailed localised the lesion sufficiently to indicate or warrant operation. Mr. Fitzgibbon had dwelt on the pain as being sufficient guide to operation. But there was no such localisation of pain in the region of Broca's space, or where the issue was placed, to warrant operation. The pain was essentially in the coronal suture at the apex of the skull. Then, with regard to the other symptoms (apart from the *post mortem* examination)—namely, the aphasic symptoms, the paralysis of the bladder, the partial paralysis of the palate, the partial paralysis of the right orbicularis, the partial paralysis of the sphincters; these did not indicate the exact position of the tumour to invite an operation. As to

whether the operation might have been performed at the last moment, when all else failed, that must be left to those who saw the case. Then, on the other hand, as he had said, while the case was in a position for operation, the symptoms were not such as to localise the tumour. He had no sympathy with the timid surgeon ; but there was something worse than timidity—namely, heedless rashness. While he did not attribute either of those qualities to the gentlemen concerned, in his opinion, the symptoms were not such as to warrant operation, and it would not have been proper to do it.

The PRESIDENT said that with regard to Mr. Fitzgibbon's observations, he knew the situation of pain in the head as indicating the seat of cerebral lesion was entirely fallacious. He had had two instances in point. In one, the pain was distinctly limited to a spot just above the eye, while the lesion proved to be an abscess which occupied the occipital lobe. In the other, the seat of pain was over one eye, and the lesion proved to be a scrofulous tumour in the cerebellum.

MESSRS. PRATT and COX also joined in the discussion.

MR. KENDAL FRANKS, in reply, said—In reference to Mr. Fitzgibbon's opinion that localised pain is a reliable symptom in localising the position of an intra-cranial tumour, it is undoubtedly the most illusory symptom we possess. Some of the speakers have spoken in the light of the *post-mortem* examination, and with a full knowledge of the nature, and of the position of the cyst. They should, however, have remembered that during life there was no such knowledge to go upon. Mr. Wheeler asserts that by trephining at Broca's space he could and would have struck the cyst. Perhaps so, but as he did not know that the cyst existed there he must have explored in every direction before he would have passed a needle through the fissure of Sylvius directly backwards, with an almost certainty of piercing either the middle cerebral artery or one of the many veins lying in the fissure. In exploring the brain, we must use the utmost caution, and we should never attempt it without employing the most thorough antisepsis. The diagnosis of an abscess was so entirely different from the history of the case that I could not adopt it. Again I thought that there was no sufficient indication for operation over Broca's space. Even had there been, an operation was contra-indicated by the patient's condition—she was clearly dying when the suggestion was made.

The Section then adjourned.

SANITARY AND METEOROLOGICAL NOTES.

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Vital Statistics

For four Weeks ending Saturday, December 31, 1887.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns	Weeks ending				Towns	Weeks ending			
	Dec. 10.	Dec. 17.	Dec. 24.	Dec. 31.		Dec. 10.	Dec. 17.	Dec. 24.	Dec. 31.
Armagh -	15·5	15·5	20·7	15·5	Limerick -	17·5	25·6	33·7	22·9
Belfast -	31·6	37·2	41·4	41·4	Lisburn -	19·3	19·3	19·3	33·8
Cork -	22·1	23·4	24·7	38·3	Londonderry	14·3	21·4	17·8	12·5
Drogheda	8·5	25·4	38·1	16·9	Lurgan -	30·8	30·8	35·9	10·3
Dublin -	34·4	37·7	28·8	34·7	Newry -	31·6	14·0	59·7	35·1
Dundalk -	17·5	17·5	17·5	13·1	Sligo -	4·8	19·2	14·4	43·3
Galway -	16·8	23·5	16·8	23·5	Waterford -	25·5	39·4	30·1	37·0
Kilkenny	21·1	42·3	16·9	16·9	Wexford -	21·4	21·4	17·1	17·1

In the week ending Saturday, December 10, the mortality in twenty-eight large English towns, including London (in which the rate was 19·5), was equal to an average annual death-rate of 21·1 per 1,000 persons living. In Glasgow the rate was 23·9; and in Edinburgh it was 21·3.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 28·8 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 4·3 per 1,000, the rates varying from 0·0 in Galway, Kilkenny, Dundalk, Sligo, Lisburn, and Armagh to 8·6 in Wexford—the 5 deaths from all causes registered in the last-named district comprising 2 from scarlatina. Among the 136 deaths from all causes registered in Belfast are 8 from measles, 3 from scarlatina, 1 from typhus, 9 from whooping-cough, 1 from simple continued fever, 3 from enteric fever, and 1 from diarrhœa. Of the 34 deaths in Cork 5 were

from measles, and 3 of the 13 deaths in Limerick resulted from the same disease. A death from diphtheria was registered in Drogheda and 1 from typhus in Lurgan.

In the Dublin Registration District the births registered during the week amounted to 183—91 boys and 92 girls—and the deaths to 241—103 males and 138 females.

The deaths represent an annual rate of mortality of 35·6 in every 1,000 of the estimated population; omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 34·4 per 1,000.

Thirty-eight deaths from zymotic diseases were registered, being 3 over the number for the preceding week, and 11 over the average for the forty-ninth week of the last ten years. They comprise 6 from measles, 15 from scarlet fever (scarlatina), 3 from whooping-cough, 1 from ill-defined fever, 3 from enteric fever, 1 from diarrhœa, 2 from dysentery, 1 from erysipelas, &c.

No cases of small-pox were admitted to hospital during the week; 9 cases of the disease remained under treatment in hospital on Saturday, December 10.

Nine cases of scarlatina were admitted to hospital, being 2 under the admissions for the preceding week; 4 scarlatina patients were discharged, 3 died, and 77 remained under treatment on Saturday, being 2 over the number in hospital on Saturday, December 3.

Seven cases of typhus and 7 of enteric fever were admitted, against 3 cases of each disease admitted during the preceding week; 17 cases of typhus, and 27 of enteric fever remained under treatment in hospital on Saturday.

Sixty-seven deaths from diseases of the respiratory system were registered, being 6 over the number for the preceding week, and 11 in excess of the average for the forty-ninth week of the last ten years; the 67 deaths from these diseases comprise 38 from bronchitis and 16 from pneumonia or inflammation of the lungs.

In the week ending Saturday, December 17, the mortality in twenty-eight large English towns, including London (in which the rate was 20·1), was equal to an average annual death-rate of 22·1 per 1,000 persons living. In Glasgow the rate was 24·9; and in Edinburgh it was 20·1.

The average annual death-rate in the sixteen principal town districts of Ireland was 33·1 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 4·3 per 1,000, the rates varying from 0·0 in eight of the districts to 16·2 in Waterford—the 17 deaths from all causes registered in that district comprising 3 from scarlatina, 1 from typhus, 2 from whooping-cough, and 1 from diarrhœa. Among the 160

deaths from all causes registered in Belfast are 13 from measles, 2 from scarlatina, 6 from whooping-cough, 2 from diphtheria, 2 from simple continued fever, 3 from enteric fever, and 6 from diarrhœa. The 36 deaths in Cork comprise 3 from measles, and the 19 deaths in Limerick comprise 1 from measles and 1 from typhus.

In the Dublin Registration District the births registered during the week amounted to 209—101 boys and 108 girls—and the deaths to 262—125 males and 137 females.

The deaths represent an annual rate of mortality of 38·7 in every 1,000 of the estimated population; omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 37·7 per 1,000.

Twenty-nine deaths from zymotic diseases were registered, being equal to the average for the corresponding week of the last ten years, but 9 under the number for the week ended December 10. They comprise 5 from measles, 12 from scarlet fever (scarlatina), 1 from typhus, 3 from whooping-cough, 1 from enteric fever, 2 from diarrhœa, 2 from erysipelas, &c.

No cases of small-pox have been admitted to hospital during the last fortnight; two patients were discharged in the course of the week, leaving 7 as the number of cases of the disease in hospital on Saturday.

Sixteen cases of scarlatina were admitted during the week, being 7 over the admissions for the preceding week; 15 patients were discharged, 1 died, and 77 remained under treatment on Saturday, being equal to the number in hospital on Saturday, December 10.

Five cases of typhus, and 5 of enteric fever were admitted, being in each instance 2 below the number of admissions in the preceding week; 15 cases of typhus, and 23 of enteric fever remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system, which had risen from 61 in the week ended December 3 to 67 in the following week, further rose to 93 last week, and are 33 in excess of the average for the corresponding week of the last ten years; the 93 deaths comprise 55 from bronchitis, 19 from pneumonia or inflammation of the lungs, 2 from croup, and 2 from pleurisy.

In the week ending Saturday, December 24, the mortality in twenty-eight large English towns, including London (in which the rate was 18·6), was equal to an average annual death-rate of 20·8 per 1,000 persons living. In Glasgow the rate was 23·4; and in Edinburgh it was 21·1.

The annual average death-rate represented by the deaths registered last week in the sixteen principal town districts of Ireland was 31·2 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 5·3 per 1,000, the rates varying

from 0·0 in Londonderry, Drogheda, Wexford, Sligo, Lisburn, Lurgan, and Armagh, to 28·1 in Newry—the 17 deaths from all causes registered in the last-named district comprising 8 from measles. Among the 178 deaths from all causes registered in Belfast are 13 from measles, 4 from scarlatina, 10 from whooping-cough, 1 from simple continued fever, 1 from enteric fever, and 5 from diarrhœa. Among the 38 deaths in Cork are 8 from measles and 1 from diarrhœa. The 25 deaths in Limerick comprise 1 from measles, 1 from typhus, and 1 from enteric fever; 3 of the 5 deaths in Galway were caused by typhus, and 1 by diarrhœa; of the 4 deaths in Kilkenny 2 were from measles; and the 4 deaths in Dundalk comprise 1 from diphtheria and 1 from simple continued fever.

In the Dublin Registration District the births registered during the week amounted to 132—62 boys and 70 girls—and the deaths to 199—99 males and 100 females.

The deaths represent an annual rate of mortality of 29·4 in every 1,000 of the estimated population; omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 28·8 per 1,000.

Thirty-three deaths from zymotic diseases were registered, being 3 over the average for the corresponding week of the last ten years, and 4 over the number for the week ended December 17. They comprise 1 from varicella (chicken pox), 3 from measles, 4 from scarlet fever (scarlatina), 2 from typhus, 8 from whooping-cough, 4 from diphtheria, 1 from ill-defined fever, 2 from enteric fever, 3 from diarrhœa, 1 from dysentery, &c. Five of the 8 deaths from whooping-cough occurred in No. 4 South City (Grand Canal-street) District.

There were only 5 cases of small-pox in hospital on Saturday, 2 patients having been discharged during the week; no cases of the disease have been admitted during the last three weeks.

Fourteen cases of scarlatina were admitted to hospital during last week, being 2 under the admissions for the preceding week. Fourteen patients were discharged, 2 died, and 75 remained under treatment on Saturday, being 2 under the number in hospital on Saturday, December 17.

Nine cases of typhus, and 4 of enteric fever were admitted, against 5 cases of each disease admitted during the preceding week. Twenty-two cases of typhus and 20 of enteric fever remained under treatment in hospital on Saturday.

Twelve cases of measles were admitted, being an increase of 7 as compared with the admissions during the preceding week.

Deaths from diseases of the respiratory system, which had risen from 67 in the week ended December 10 to 93 in the following week, fell to 46, or 14 below the average for the corresponding week of the last ten years; the 46 deaths comprise 32 from bronchitis, and 7 from pneumonia or inflammation of the lungs.

In the week ending Saturday, December 31, the mortality in twenty-eight large English towns, including London (in which the rate was 23·3), was equal to an average annual death-rate of 24·8 per 1,000 persons living. In Glasgow the rate was 24·5; and in Edinburgh it was 21·5.

The average annual death-rate in the sixteen principal town districts of Ireland was 33·9 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 5·0 per 1,000, the rates varying from 0·0 in Londonderry, Galway, Drogheda, Lisburn, and Armagh to 17·6 in Newry—the 10 deaths from all causes registered in the last-named district comprising 5 from measles. Among the 178 deaths from all causes registered in Belfast are 17 from measles (which caused 13 of the deaths registered in the preceding week), 3 from scarlatina, 13 from whooping-cough (10 fatal cases of which disease were recorded in the preceding week), 3 from diphtheria, 2 from simple continued fever, 2 from enteric fever, and 1 from diarrhœa. The 59 deaths in Cork comprise 10 from measles and 1 from whooping-cough; 3 of the 17 deaths in Limerick resulted from measles; and the 16 deaths in Waterford comprise 1 each from scarlatina, typhus, and whooping-cough.

In the Dublin Registration District the births registered during the week amounted to 188—96 boys and 92 girls—and the deaths to 245—127 males and 118 females.

The deaths represent an annual rate of mortality of 36·2 in every 1,000 of the estimated population; omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 34·7 per 1,000.

Twenty-six deaths from zymotic diseases were registered, being 7 under the number for the preceding week, and 5 below the average for the fifty-second week of the ten years, 1877–86. They comprise 1 from measles, 6 from scarlet fever (scarlatina), 3 from whooping-cough, 2 from diphtheria, 2 from simple continued and ill-defined fever, 1 from diarrhœa, 1 from dysentery, 1 from erysipelas, &c.

There were but 4 cases of small-pox in hospital on Saturday, December 31, 1 patient having been discharged during the week. No cases of the disease have been admitted during the last four weeks.

Eighteen cases of scarlatina were admitted to hospital, against 14 admissions in the preceding week; 16 patients were discharged during the week, and 77 remained under treatment on Saturday, being 2 over the number in hospital on Saturday, December 24.

In the week ended December 24, 9 cases of typhus were admitted to hospital, but during this week no cases of the disease were received; 4 cases of enteric fever were admitted in each of the two weeks. Twenty cases of typhus and 17 of enteric fever remained under treatment in hospital on Saturday.

Only 4 cases of measles were admitted, against 12 admissions in the preceding week.

Deaths from diseases of the respiratory system, which had fallen from 93 in the week ended December 17 to 46 in the following week, rose last week to 70, or 9 over the average for the corresponding week of the ten years, 1877–86; the 70 deaths comprise 49 from bronchitis and 11 from pneumonia or inflammation of the lungs.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N., Long. 6° 15′ W., for the Month of December, 1887.

Mean Height of Barometer, - - -	29·833 inches.
Maximal Height of Barometer (on 2nd, at 9 a.m.) -	30·382 ,,
Minimal Height of Barometer (on 14th, at 9 p.m.) -	28·991 ,,
Mean Dry-bulb Temperature, - - -	39·5°.
Mean Wet-bulb Temperature, - - -	37·8°.
Mean Dew-point Temperature - - -	35·5°.
Mean Elastic Force (Tension) of Aqueous Vapour, -	·211 inch.
Mean Humidity, - - - - -	85·9 per cent.
Highest Temperature in Shade (on 3rd), - -	55·1°.
Lowest Temperature in Shade (on 22nd), - -	25·1°.
Lowest Temperature on Grass (Radiation) (on 22nd),	18·0°.
Mean Amount of Cloud, - - - -	59·1 per cent.
Rainfall (on 19 days), - - - -	1·223 inches.
Greatest Daily Rainfall (on 15th), - -	·240 inch.
General Directions of Wind, - - -	W., N.W.

Remarks.

December was damp and chilly, with a rainfall much below the average in amount, but distributed over as many as 19 days. In the earlier part, both atmospherical pressure and temperature were very unsteady. After the 16th, the thermometer remained constantly low, never rising above 44·3° in the screen, and falling on the 22nd to 25·1° in the screen and to 18·0° on the grass. During this cold period the sky was sometimes densely overcast—indeed, after the 27th the sun was scarcely seen.

In Dublin the mean temperature (39·9°) was—as in November, October, and September—decidedly below the average (41·3°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 39·5°. In the twenty-two years ending with 1886, December was coldest in 1878 (M. T. = 32·8°) and in 1874 (M. T. = 36·8°), and warmest in 1865 (M. T. = 46·2°). In 1886, the M. T. was as low as 37·9°; in the year 1879 (the cold year) it was also 37·9°.

The mean height of the barometer was 29·833 inches, or 0·049 inch below the average value for December—namely, 29·882 inches. The mercury rose to 30·382 inches at 9 a.m. of the 2nd, and fell to 28·991 inches at 9 p.m. of the 14th. The observed range of atmospherical pressure was, therefore, 1·391 inches—that is, a little less than an inch and four-tenths. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 39·5°, or 2·6° below the value for November, and 7·0° below that for October, 1887; that calculated by Kaemtz's formula—viz., *min.* + (*max.*—*min.* × ·41) = *Mean Temp.*—from the means of the daily maxima and minima was 39·1°, or 1·4° below the average mean temperature for December, calculated in the same way, in the twenty years, 1865–84, inclusive (40·5°). The arithmetical mean of the maximal and minimal readings was 39·9°, compared with a twenty years' average of 41·3°. On the 3rd the thermometer in the screen rose to 55·1°—wind S.W.; on the 22nd the temperature fell to 25·1°—wind W. The minimum on the grass was 18·0° on the 22nd. The rainfall was 1·223 inches, distributed over 19 days. The average rainfall for December in the twenty years, 1865–84, inclusive, was 2·516 inches, and the average number of rainy days was 17·0. The rainfall, therefore, was decidedly below the average, while the rainy days were above it. In 1876 the rainfall in December was very large—7·566 inches on 22 days; in 1872, 4·932 inches fell on as many as 24 days; and in 1868 (which was otherwise a fine and dry year), 4,749 inches fell on as many as 27 days. On the other hand, in 1867, only ·771 of an inch was measured on 13 days; and in 1871, the December rainfall was only ·797 of an inch on 15 days. In 1885, only ·742 of an inch of rain was measured on but 10 days, but in 1886 the rainfall was 3·348 inches, distributed over as many as 21 days.

Solar halos appeared on the 4th and 5th. Distant thunder was heard at 11 50 a.m. of the 18th. There was a faint aurora borealis on the night of the 16th. Hail fell on the 17th, 20th, and 27th, snow or sleet on the 6th, 7th, 18th, 20th, 22nd, and 27th. The atmosphere was more or less foggy on the 10th, 11th, 22nd, 26th, 28th, 29th, and 31st—that is, on seven days. Temperature exceeded 50° in the screen on 7 days, compared with 7 in November, while it fell to or below 32° on 7 days, compared with 4 days in November. The minima on the grass were 32° or less, on 26 nights. There were gales on two days.

At the beginning of the month the weather was determined by very extensive and deep depressions over the Norwegian Sea, to the north of Scotland and west of Norway. Strong westerly winds and unsettled showery weather prevailed in the far north, while it was mild and breezy in Ireland.

During the week ending Saturday, the 10th, the weather remained changeable but free from features of an extreme character, except as

regards temperature, which was occasionally very high for the time of year. Atmospherical pressure was very unsteady, and the weather, in consequence, was unsettled, rainy and squally at times. The barometer was throughout low in the far north, high over Spain and the south of France. Temperature became very high on Thursday, the 8th, when a maximum of 53·7° was recorded in Dublin, the minimum having been 32·3° on the previous day. The mean height of the barometer was 29·643 inches, the extremes were—highest, 29·978 inches at 9 p.m. of Sunday; lowest, 29·171 inches at 9 a.m. of Tuesday. Rain fell on seven days to the amount of ·432 inch—the maximal fall in 24 hours having been ·215 inch on Monday, On Tuesday and Wednesday there were showers of sleet and snow.

The week ending on the 17th was rough and wet, and although temperature was, as a rule, considerably above the average, the changes from excessive mildness to relative cold were somewhat frequent and sudden. The weather remained in a most unsettled condition throughout the week, owing to the passage of a series of deep depressions across the British Islands from S.W. to N.E. Temperature was very unsteady—in Dublin the mean was 41·4°, and the extremes were—highest, 52·6 on Tuesday; lowest, 28·1° on Monday. The mean height of the barometer was only 29·492 inches, the highest reading being 30·090 inches at 9 p.m. of Sunday, the lowest, 28·991 inches, at 9 p.m. of Wednesday. Rain fell to the amount of ·477 inch, on six days—the maximal fall in 24 hours being ·240 inch on Thursday. Hail was observed on Saturday.

In the period from the 18th to the 24th, inclusive, the weather was of two distinct types. In the earlier part, the distribution of pressure was cyclonic, and the gradients (which were somewhat steep) were favourable for W. and N. W. winds. In the latter part, the distribution of pressure became largely anticylonic, the highest barometer lying off the west coast of Ireland. In Dublin the weather was chiefly cold—the atmosphere being often raw and damp. Westerly to northerly winds prevailed. On Wednesday a considerable fall of snow and hail occurred on the Wicklow coast, while dry clear weather and frost were experienced in the city. A thaw on Thursday evening was followed by two dull damp days. The barometer ranged between 29·646 inches at 9 p.m. of Sunday and 30·129 inches at 9 p.m. of Saturday—the mean pressure for the week being 29·904 inches. The mean temperature was 35·6°, the highest being 44·3° on Saturday; the lowest, 25·1° on Thursday. Rainfall was recorded on two days—the total amount being ·098 inch, and the maximal fall in 24 hours being ·072 inch on Sunday.

The last week, ending on Saturday, the 31st, was very cold over the entire Continent of Europe, and particularly so over the more northern and central countries. Heavy falls of snow occurred in Germany, Austria, and Spain, while occasional showers of snow, sleet, or cold rain

fell in the north and east of the United Kingdom. On Tuesday, the 27th, and Saturday, the 31st, the thermometer fell to 8° or 9° below freezing point over England. On the Continent the weather was much more severe, the thermometer falling many degrees below zero over Finland and Northern Russia on several occasions, and to some degrees below zero even in Southern Germany on the night of the 31st. During the week a very cold, raw, damp, dull spell of weather was experienced in Dublin. The mean temperature was nearly 4° below the average, and the winds—although light—were chiefly from polar points of the compass. In Dublin, the sun remained invisible after Wednesday. Temperature ranged between 43·4° on Sunday (Christmas Day), and 29·4° on Wednesday—the mean of the 9 a.m. and 9 p.m. readings being 36·9°. The mean height of the barometer was 30·146 inches—pressure decreasing from 30·328 inches at 9 a.m. of Friday, to 29·878 inches at 9 p.m. of Saturday. The rainfall amounted to ·126 inch, of which quantity ·065 fell on Wednesday. There were three "rainy days."

From January 1st up to and including December 31st, rain fell in Dublin to the amount of only 16·601 inches on but 160 days—the average for the twelve months based on twenty years' observations being 28·015 inches, and 194·6 rainy days. Thus, the rainfall was equal to only 59·3 per cent. of the average, while the rainy days were equal to 82·2 per cent. of the average.

At Greystones, Co. Wicklow, the rainfall in December amounted to 1·95 inches, distributed over 16 days.

Rainfall in 1887,

At 40 Fitzwilliam-square, West, Dublin

Rain Gauge:—Diameter of funnel, 8 in. Height of top—Above ground, 1 ft. 2 in.; above sea level, 57 ft.

Month	Total Depth	Greatest Fall in 24 Hours		Number of Days on which ·01 or more fell
	Inches	Depth	Date	
January, - - -	1·816	·440	10th	16
February, - - -	·541	·136	2nd	11
March, - - -	1·485	·594	11th	15
April, - - -	1·765	·435	29th	10
May, - - -	·882	·516	19th	10
June, - - -	·252	·093	3rd	5
July, - - -	1·194	·534	31st	13
August, - - -	1·520	·350	17th	16
September, - - -	1·513	·482	1st	16
October, - - -	1·398	·629	31st	11
November, - - -	3·012	·870	5th	18
December, - - -	1·223	·240	15th	19
Total, - -	16·601	—	—	160

The rainfall fell remarkably short of the average annual measurement of the twenty years, 1865–84, inclusive—viz., 28·015 inches.

It will be remembered that the rainfall in 1884 was very exceptionally small—20·467 inches, the only approach to this measurement in Dublin being in 1870, when only 20·859 inches fell. In six of the twenty years in question the rainfall was less than 26 inches, and in 1885 it was 26·614 inches.

All these low figures are thrown into the shade by the record of 1887, in which year the total precipitation in Dublin amounted to only 16·601 inches—distributed, however, over 160 days. The maximal downpour in 24 hours was ·870 inch, on November 5th, so that there was no day during the year upon which an inch of rain fell. It is worth noting that the maximal falls each month when added together give as the result 5·319 inches. It thus appears that nearly one-third of the total rainfall for the year occurred on 12 days; while the small balance of 11·282 inches was distributed over no less than 148 other days upon which rain fell. There were 205 dry days during the year. The total rainfall—16·601 inches—equalled only 59·3 per cent. of the average—28·015 inches; but the rainy days—160—equalled 82·2 per cent. of the average—194·6 days.

The scanty rainfall in 1887 is in marked contrast to the abundant downpour in 1886, when 32·966 inches—or as nearly as possible double the fall of 1887—fell on 220 days. Only twice since these records commenced has the rainfall in Dublin exceeded that of 1886—namely, in 1872, when 35·566 inches fell on 238 days, and in 1880, when 34·512 inches were measured on, however, only 188 days.

In 1887 there were 160 rainy days, or days upon which not less than ·01 inch of rain (one hundredth of an inch) was measured. This was largely in defect of the average number of rainy days, which was 194·6 in the twenty years, 1865–84, inclusive. In 1868—the warm dry year of recent times—the rainy days were only 160, and in 1870 they were only 145. In 1868, however, the rainfall amounted to 24·935 inches, or more than 8 inches above the measurement in 1887, and even in 1870, 20·859 inches were recorded. Included in the rainy days are 29 on which snow or sleet fell, and 34 on which there was hail. In March hail was observed on 9 days and in April on 10 days. Snow or sleet fell on 5 days in January, on 9 days in March, and on 6 days in December. Thunder and lightning occurred on nine occasions during the year—four times in April, once in July and August, twice in September, and once in December.

The rainfall was distributed as follows:—3·842 inches fell on 42 days in the first quarter, 2·899 inches on 25 days in the second, 4·227 inches on 45 days in the third, and 5·633 on 48 days in the fourth and last quarter.

Of the 5·633 inches which fell in the last quarter of the year, 3·012 inches were measured in November. In the six spring and summer months, when, of course, evaporation is greatest, only 7·126 inches of rain fell in Dublin on 70 days out of 183.

J. W. Moore, B.A., M.D., Univ. Dubl.; F. R. Met. Soc.

PERISCOPE.

THE CANARY ISLANDS.

Mrs. Olivia M. Stone, author of "Tenerife and its Six Satellites," writes to us as follows under date December 15, 1887:—Now that the Canary Islands are rapidly becoming better known as one of the most advantageous health resorts within easy reach of England, it may be of some interest to mention a few facts concerning diseases in the Archipelago. The one pre-eminent fact is that the climate seems to modify the virulence of the worst, the most dangerous diseases. Puerperal fever, though rather prevalent, is seldom, I may almost say never, fatal, though I know of cases where the patient has been neglected for several days before medical advice was obtained. Diphtheria is also very prevalent in the large towns, owing to the total absence of the most ordinary sanitary precautions, but it seems always to exist in a mild form. I know of certain families who apparently have it frequently, but this terrible disease seems to be only fatal where the most elementary knowledge of nursing is absent. Fevers of all kinds are lighter in character. The treatment recommended there by the profession is different to that in vogue in England. For example, it starts by a thorough clearing out of the system by means of somewhat violent purgatives and emetics. Equable as is the climate by day and night, the natives suffer most from chills, which often end fatally. This, I think, may be in a great measure accounted for by the absence of woollen or silken clothing. Those who visit the Canaries from colder northern latitudes, where wool is worn next the skin, and who most wisely continue this habit, do not suffer in this way. It is advisable that every article of clothing worn in the islands be made of either wool or silk. Thus armed one is almost impregnable to the attacks of any disease of a catarrhal nature. Malaria does not exist. Precautions as to hours of recreation, such as keeping in the house at sundown, are in these islands unnecessary, and one may be out on the hottest day at its hottest hour without any fear of sunstroke. The only disease which in any way can be said to be peculiar to, or prevalent in, the Canary Islands is elephantiasis, which, as is well known, does not affect well-nourished inhabitants, and is neither contagious nor infectious. In Gran Canaria diseases of the stomach and

intestines are common among the peasants. Such are clearly traceable to the national food—*gofio*—which in this island is made of Indian corn. For phthisis the Canary Islands have been proved of inestimable value, and therefore on this point nothing more need be said. The temperature throughout the year, by day and by night, varies exceedingly little. In my recently-published work on these islands I have gone so fully into this question that I need not recapitulate it here. I should not have thus ventured to trouble you had I not been asked by some leading members of the medical profession to summarise the facts bearing upon diseases scattered through the pages of my book and to add thereto others which I had deemed unsuitable for the general reader.

CYCLIC ALBUMINURIA.

Dr. W. B. Canfield, of Baltimore, gives some account of this affection as described by Klemperer and others, and records a case which came under his own observation, in which a young man for a long time passed albumin in his urine without any other symptom of ill health being present. The passage of the albumin was caused or increased by exercise, and diminished by rest. Such cases are a source of great anxiety to medical referees of insurance companies. Dr. Munn, of New York, finding that nearly ten per cent. of all deaths of policy-holders in his Company occurred from some form of Bright's disease, made an extensive examination of the urine of all applicants from 1877 to 1880. In following up the histories of the rejected cases, he found in 1880 that four had died out of sixty-nine, and the general health of those who had been under observation for more than one year was gradually deteriorating, and for this reason he was inclined to regard albuminuria as of grave significance.—*The Medical News*, July 30th, 1887.

ARCHIVES DE TOCOLOGIE.

We are informed that from the beginning of the present year this periodical, founded in 1874 by Professor Depaul, will be edited by Dr. Auvard, 21 Rue de Lille, Paris, who has succeeded M. de Soyre. The "Archives" appear as a monthly journal, and are devoted to Obstetrics, Gynæcology, and Diseases of Infants.

TOOTH-ACHE REMEDY.

Extract of opium, camphor, and balsam of Peru, of each 50 centigrammes; mastick, 1 gramme; chloroform, 10 grammes. Mix and make a solution. A small piece of cotton wool wetted with this solution, and placed in the hollow of the aching tooth, gives immediate relief.—*L'Union Médicale*, No. 148.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. IX.—*Congenital Spastic Paralysis and Ataxic Paraplegia.*[a] By C. J. NIXON, M.B., LL.D., Univ. Dubl.; M.D. (Hon. Causâ), R.U.I.; Professor of Practice of Medicine and Pathology, Catholic University; Senior Physician to the Mater Misericordiæ Hospital.

SPASTIC paralysis occurring in children would appear to be, in origin, congenital or acquired; in distribution, hemiplegic, paraplegic, irregular, or general; and as regards the site of the paralytic lesion, cerebral or spinal. The congenital forms may be tabulated as follows:—

(*a*) Cases where there is some arrest of development of the motor tracts in the brain or spinal cord.

(*b*) Certain forms of nervous intra-uterine disease.

(*c*) Cases where the brain or spinal cord has been injured during delivery.

The three conditions which appear to be met with most frequently are:—

Porencephalus cerebralis; injury to the motor cerebral centres by instrumental delivery; injury to the vertebral column and spinal cord by excessive traction during delivery.

Porencephalus was a term originally introduced by Heschl[b] to

[a] Read before the Medical Section of the Royal Academy of Medicine in Ireland, on Friday, January 27, 1888. [For the discussion on this paper, see page 265.]

[b] Gehirndefect und Hydrocephalus. Prager Vierteljahrschrift. Bd. LXI. 1859.

indicate the appearance of an excavation, usually filled with serous fluid, on the surface of the cerebral hemisphere, at the bottom of which was an opening leading into the lateral ventricle. Kundrat,[a] who specially studied this condition, extends its signification and applies it to all defects in which absence of tissue is a prominent feature. In 34 cases of infantile spastic paraplegia recorded by M'Nutt in the *American Journal of Medical Science*, 1885, the striking point is demonstrated that in all a gross defect of the cerebral cortex existed corresponding to the fissure of Rolando.

From injury during birth, due most frequently to the pressure of the forceps, the upper part of the Rolandic area is involved—viz., the leg centres, either by direct effect of pressure or by a meningeal hæmorrhage limited to the upper part of the central convolutions. As a result of this, a descending degeneration of the pyramidal tracts which are distributed to the lower extremities is set up. It is remarkable that in those cases the condition of the lower limbs, as far as contracture and myotatic irritability are concerned, is somewhat different from what is ordinarily observed in paralysis depending on one-sided cerebral disease, being like that which is met with in the upper limb in cases of hemiplegia with late rigidity. However, in the condition under consideration, the innervation of the legs is interfered with from both hemispheres; hence the condition of the lower is approximate to that of the upper limb in hemiplegic paralysis.

In a number of cases of spastic paraplegia of infancy which came under the observation of Dr. Ross,[b] the children were born with their feet foremost, and he is inclined to believe that injury may have been done to the vertebral column and spinal cord by undue traction exercised during delivery. The injury to a vertebra, or the occurrence of a spinal meningeal hæmorrhage, would be likely to set up a transverse myelitis from which a descending degeneration of the pyramidal tracts would arise.

In those cases of congenital paraplegia where there is no history of injury, the lesion must arise from intra-uterine disease or arrest of development of the motor tracts.

The case which I have the honour of exhibiting to the Academy illustrates, I believe, the form of congenital spastic paraplegia, which owes its origin to an injury inflicted on the brain by instrumental delivery, and the notes of it are briefly as follows :—

[a] De Porencephalie : eine anatomische Studie. Graz. 1882.

[b] The Diseases of the Nervous System. Ross. Vol. II. P. 485.

Case I.—J. D., aged sixteen years, was admitted into the Mater Misericordiæ Hospital on 20th of November last, complaining of weakness and rigidity of the legs. Both had been paralysed since birth. His family history is a good one; both parents are living and healthy, and all his brothers and sisters, six in number, are strong and free from all symptoms of nervous disease. His mother's labours were normal, except in his own case, he being born after a very tedious labour, in which the forceps had to be used.

Present Condition.—The boy upon admission to hospital, and at present, is of very spare habit, and of a clear, healthy complexion. He is fairly intelligent; but he states that at school he is not as quick as his class-mates. The most striking point about him, on superficial examination, is his peculiar walk. The gait is waddling, with a marked tendency to a twist of the trunk to the left side. The legs are never fully extended upon the thighs, owing to a permanent contracture of the ham-string muscles, and as each is drawn forward in progression, it describes an arc with its convexity outwards—the arcs formed by the movements of the two limbs intersecting in front—so that to some extent the mode of progression is cross-legged. The tip and inner part of each foot come first in contact with the ground, each forward movement being indicated by a scraping noise. There is a marked inclination of the knees towards each other, owing to the contraction of the adductors, whilst the feet incline considerably outwards. The left leg on examination was found to be one inch shorter than the right, which accounts for the swaying of the trunk in progression towards the left side. An examination of the reflexes disclosed the following:—

Superficial.—Plantar, cremasteric, and epigastric reflexes are completely absent.

Deep.—The patellar-tendon and quadriceps reflexes are most markedly exaggerated; in the right leg, a tap upon the quadriceps tendon gives rise to general tremulation of the limb. Ankle clonus is not constantly present, but occasionally it is capable of being produced to a marked extent. There is at times a considerable increase in the tension of the calf muscles, so that a condition of talipes equinus is produced. When the patient lies down in bed the foot is rigidly extended upon the leg, and the leg upon the thigh, whilst the great toe is flexed at the metatarso-phalangeal joint. When the contracture in the calf muscles is in anyway increased, ankle clonus cannot be elicited. There is no evidence of there being any lesion of sensibility. The limbs are but poorly nourished, but present no signs of trophic disturbance. Although the patient stated there was nothing wrong with his arms, upon examination it was found that there was some rigidity of the right upper extremity, the forearm being slightly bent upon the arm, and the former incapable of complete extension. The elbow reflex upon the

right side was very lively. The dynamometer registered a pressure of the right hand equal to 50 lbs., whilst the pressure of the left amounted to 65 lbs.; the boy states he is left-handed. His height is 5 feet 4 in. The head and face are somewhat peculiar in appearance, presenting some indications of the microcephalic type. The upper lateral portions of the parietal bones are flattened to a slight extent, and the two planes meet in an upward projection of the vertex. The circumference of the head measures $21\frac{1}{2}$ in.

It is scarcely correct to describe the case as one of paraplegia, considering the implication of the upper extremity in the paralysis. But whilst the lesion in the arm is of a comparatively trivial nature, that of both legs gives to the case the distinctive character of paraplegia.

The distribution of the paralysis shows that it is of cerebral origin; the history of the case as to the instrumental delivery and the existence of paralysis from birth point, I believe, to an injury of the upper part of the central convolutions, affecting the leg centres, and to a partial extent that of the right upper limb.

It has been noted in cases of congenital spastic paraplegia that whilst the patellar-tendon reflex is exaggerated, ankle clonus cannot, as a rule, be produced. This is accounted for by assuming that an arrested development takes place in those parts of the pyramidal tracts which are distributed to the legs. I think in most of those cases the contraction which exists in the calf muscles opposes the development of a condition upon which ankle clonus depends.

The absence of the skin reflexes contrasts markedly with the exaggeration of the tendinous ones. This is interesting in connection with the observations of Rosenbach and Jastrowitz that superficial reflexes are lessened or abolished in cases of cerebral disease.

The second case brought under the notice of the Academy is one of ataxic paraplegia, and the notes in connection with it are briefly as follows:—

Case II.—Mrs. O'G., aged twenty-six, is the mother of two children, both of whom are living and healthy. There is no history of any nervous disease in her family; she has never had gout, rheumatism, or syphilis. Except for some slight irregularities in menstruation, the patient's health was good up to May, 1883. At this time she complained of frequent desire to micturate, which was accompanied by some symptoms of retention; her sight became impaired; she suffered from pain in the lower part of the back upon exertion; and occasionally her left leg became

stiff, weak, and painful across the thigh, to such a degree as to necessitate her resting for a time, when these symptoms passed away. In the course of a few months all trouble completely subsided. She married in 1884, and continued in good health up to August, 1887, when she had a miscarriage, attended with considerable loss of blood. Two months afterwards, the weakness and rigidity of the left leg returned; she suffered from a constant dull pain over the lower part of the back, in the sacral region; and she had incontinence of urine, especially occurring at night. In a short time she remarked that her right leg became affected, and she had some difficulty in walking without staggering. She had never had any painful sensation in the legs, evidences of paræsthesia, or girdle zone. The difficulty in walking gradually progressed; it became intensified in the absence of light; and to obtain relief the patient presented herself at hospital. Her present condition may be summarised as follows:—She has marked signs of ataxy in the lower limbs, shown by the unsteady character of her walk; her inability to stand erect with the eyes closed; and, even with the exercise of vision, equilibrium is with difficulty maintained in the erect position. She has the ordinary signs of ataxy when lying in bed, such as the inability to determine the position of the limbs, or execute with precision any complicated movement with the feet or toes. When standing, the irregular movements of the tendons upon the dorsum of the foot were at times to be observed. The mode of walking is not, however, characteristically that of locomotor ataxy. The legs are more or less rigid, drag to some extent, and shake from clonus usually when the patient begins to walk, and sometimes when she suddenly stands still. The front of the foot is brought first to the ground. She finds the legs sometimes quite rigid when lying in bed. The left leg she finds weaker than the right one. There is no lesion of sensibility, either tactile or common, to be noted. All the deep reflexes are markedly exaggerated. Ankle clonus is produced by the least attempt at flexure of the ankle-joint. A rectus clonus can also be readily produced, and, on direct stimulation, a clonus in the vastus internus muscle. A very peculiar point noticed in connection with the motor paralysis is its variability in its amount. At times she can walk fairly well, and without assistance; at other times she is almost completely powerless. The arms are not affected to any extent recognisable by objective signs. The patient, however, states that her right arm is not as strong as usual, and that she does not write quite as well as formerly. There is now no defect of vision; pupils respond to light and accommodation. They are unequal in size, the right being small and irregular. This is due to a partial posterior synechia, the result of an old attack of iritis. There is no impairment of articulation or tremor in any of the muscles present. The urine is normal in reaction and in quality. There is no affection of the bladder or ureters.

The case just narrated is an instance of one of the compound system degenerations of the spinal cord to which considerable attention has been given since Westphal first noticed the condition in 1878.[a] At present only one other compound system degeneration is recognised as a distinct type of disease—viz., amyotrophic lateral sclerosis—an example of which I had an opportunity of bringing before the Medical Society of the College of Physicians in 1879.

Although the symptoms of ataxic paraplegia correspond in certain respects to those of locomotor ataxy and of lateral spinal sclerosis, in certain points it differs from both of these affections. In ataxic paraplegia, whilst there is marked inco-ordination of movement, the sensory nerves do not appear to be implicated, either peripherally or in the spinal cord. This explains the persistence of myotatic irritability, the absence of lightning pains in the limbs and of any lesion of tactile sensibility. It seems almost certain that co-ordination of muscular movement, although usually involving a complex mechanism, depends mainly on the existence of sensory muscle-nerves. The fact that ataxy of the most pronounced character may be present where disease is exclusively confined to the peripheral nerves, as in some cases of locomotor ataxy, shows that the condition may be due to implication of a single one of the mechanisms involved in co-ordination, whilst the ascertained fact that there is no necessary relation between loss of either tactile or common sensibility and co-ordinating power, apart from other considerations, compels us to admit the existence of sensory muscle-nerves. That these sensory muscle-nerves pass to the cord by the posterior roots of the spinal nerves, and that they are first distributed in the external root-zone, the analogies of disease abundantly prove. Lesions in either of these situations give rise to lightning pains, disturbances of sensibility, and probably extinction or impairment of the reflexes. Beyond these paths the course taken by ordinary sensory impressions and those coming from the muscles appears to be different, and if so, a lesion which affects alone the paths for the sensory muscle-nerves, may be attended by ataxy alone. A very important case recorded by Gilbert in the "Archives de Neurologie," 1882, lends strong support to this view. In the instance referred to, a stab inflicted in the dorsal region of the spine produced complete motor paralysis in the left leg, with loss of cutaneous sensibility in the right. On

[a] Ueber combinirte (primäre) Erkrankung der Rückenmarkstränge. Arch. f. Psychiatrie, Bd. xi. 1878.

the side of motor paralysis, although sensibility was unimpaired, the sense of posture was completely lost and the patient could not tell whether his leg was extended or flexed, and the condition passed into complete ataxy. On the other hand, in the right leg, in which sensibility was impaired, the sense of posture was present, and no signs of ataxy developed themselves. This case goes, at least, to show that whilst the nerves conducting tactile impressions decussate in the cord, those conducting muscular sense impressions do not. What, then, is the position of the sensory-muscular tracts in the cord? Before attempting to answer this question, in the light of experiences gleaned from the experiments of disease, I may point out the peculiarities alluded to by Gowers in describing the pathological anatomy of ataxic paraplegia—1st, that in nearly all the cases of ataxic paraplegia in which there has been an opportunity of examining the spinal cord, the sclerosis has been found to be less intense in the neighbourhood of the root zone of the postero-external column than is the case in tabes, thus accounting for the non-interference with the reflex arc and the absence of signs of irritation in the posterior nerve roots. 2ndly, in ataxic paraplegia, the disease is often more intense in the dorsal than in the lumbar region of the cord; whilst in tabes the process of sclerosis is so widespread and intense over the entire posterior column in the lumbar region as to suggest that the affection of the column of Goll is one of an ascending degeneration; and thirdly—and to this, I think, most importance should be attached—the sclerosis in ataxic paraplegia occupies that region of the spinal cord in which the short vertical fibres run which connect the posterior grey matter at different levels. These fibres would appear to play a significant *rôle* in the causation of ataxy. They constitute the "posterior ground fibres" of Flechsig, have a course upwards and downwards of only four or five centimetres, and give rise in the middle of the anterior third of the external column in the dorsal region to a descending degeneration of a comma-shaped bundle of fibres. When we reflect how important it is for the purposes of co-ordination that the different spinal segments should be closely connected together, we can understand the importance of the function assigned to these fibres. Lastly, it is to be noted that in ataxic paraplegia the disease in the lateral columns usually involves the direct cerebellar tract, which, according to Flechsig, conducts muscular sensation from the lower part of the trunk.

It would seem, then, apparently correct, if three situations in

the cord were mentioned as positions in which the sensory muscle tracts are met with, apart from their connection with the posterior horns of grey matter—viz., the columns of Goll, the direct cerebellar tracts, and the fibres constituting the posterior ground fibres of Flechsig.

Examining for a moment the nature and cause of the motor paralysis which exists in ataxic paraplegia, I may say that the case exhibited illustrates in a marked degree the features usually noted in this condition. Although ataxy exists to a marked extent, the gait is more or less rigid. The legs are moved stiffly forwards in progression, and the front part of the foot is placed first upon the ground. The stage of ultimate spasm, in which clasp-knife rigidity and clonic spasm exist, has not yet been reached. The examination of the cord in cases of ataxic paraplegia shows that the affection of the pyramidal tracts may be in some cases so slight as to suggest a doubt of the paralysis being due to disease of these columns. There is, however, one element of obscurity which arises, in referring to the pyramidal tracts in explanation of motor paralysis. Taking the upper segment of the motor path we can with comparative facility note the conditions of disease which affect it from its origin in the motor area of the cerebral cortex down to its distribution in the anterior and lateral columns of the spinal cord. But between these pyramidal fibres and their terminations in the ganglion cells in the anterior grey horn, the motor fibres divide and subdivide in the intermediate grey matter into a delicate network of fibrillæ—the network of Gerlach—which join with the branching processes of the nerve cells of the anterior horn. As yet we have no proof of the existence of any lesion which is confined to these intermediate fibres, though it is easy to realise how a limited lesion in this region—limited both as to distribution and intensity—would be likely to produce serious disturbance of the motor function, whilst, except the disease affected universally the fibres of the entire area, the recognition of any morbid change might be a matter of insuperable difficulty. It should further be borne in mind that the distance of these fibres from their trophic centres renders them specially prone to disturbances of nutrition.

There is one point which must strike anyone who has had some experience in dealing with affections of the spinal cord attended with paralytic lesions—that in a certain proportion of cases signs of the most profound paralysis completely subside. We are prepared for this in certain instances—for example, in cases of

compression myelitis, in acute anterior poliomyelitis, and in the paralyses that follow concussion or hæmorrhage. But we are disposed to regard it as phenomenal if spinal paralyses outside this category gradually improve or recover. No doubt many cases of paralysis which have been regarded as central in origin are in reality due to peripheral neuritis; but, excluding these, cases undoubtedly depending upon central lesions, at least undistinguishable from those depending on central lesions, are met with in which signs of profound paralysis subside. One of the best marked instances of lateral spinal sclerosis which I have ever had under observation—a case which is recorded in the "Transactions of the Academy of Medicine" for 1884—got completely well in the course of some five or six months. It appears to me to be an error to assume the existence of sclerosis as a matter of routine opinion, or, even if that opinion be formed, that necessarily the lesion is irremediable. Notwithstanding the giant strides that have been made in the study of affections of the brain and spinal cord, we must admit that much more has been done in the direction of localisation, and in the determination of functions of nerve centres and tracts, than in adding to our knowledge of the different pathological processes by which disease is originated. This is, after all, intelligible enough. Taking the cord alone, without its membranes, it is probable that morbid changes may arise in any one of the elements of which it is composed—ganglion cells, nerve fibres, connective tissue and neuroglia, blood-vessels and lymphatics. Will not the progress and termination of the lesion depend upon the tissue which is involved, upon whether the change is an inflammatory or a degenerative one, or whether inflammation precedes degeneration or follows it? But, even apart from those cases where paralysis depends upon a change in structure, have we not abundant proof that conditions of toxæmia may produce profound lesion of function without any recognisable change of structure; and further, that these effects are produced on certain nervous structures by a process of selective affinity. I may mention as instances—the amaurosis produced by the use of tobacco, quinine, or alcohol; the local character of lead palsy; the motor paralysis which is developed in acute ascending paralysis—a disease, it would seem, of bacterial origin; the effects upon the reflex function of the cord by the use of strychnin, or in tetanus; the limitation of the effects of curara to the termination of the lower motor segment. More suggestive even than any of these mentioned is

the occurrence of eleven cases of spastic paraplagia, reported by Brunelli,[a] as a result of the use of a vetch (Lathyrus Cicera) as an article of diet.

Instances such as I have mentioned afford a hope that the treatment of some forms of spinal paralysis may be of greater avail in the future than it is at present. No doubt cases are benefited by certain remedies, and under their use recovery sometimes takes place. In cases of spastic paralysis I believe beneficial effects follow the use of arsenic, chloride of gold, cod-liver oil, and calabar-bean. In some cases the degree of paralysis seems to depend to a great extent upon a feeble circulation, due to a weak and excitable heart. This was specially the case with a lady suffering from lateral spinal paralysis whom I have been attending for the past seven years, and who has been seen frequently by Dr. Gowers, and once by Dr. Charlton Bastian. In very cold weather, or when from any condition the heart becomes unusually weak, the limbs are almost powerless as far as active exertion is concerned; but when the patient gets warm, or the action of the heart is strengthened, there is a considerable return of power in the legs. Her general condition has been much improved by the use of iron and Fellows' Syrup, in addition to the drugs already enumerated, and she is gradually gaining power in the legs.

If we recognise these forms of spinal paralysis which do not pass into hopeless degeneration, or forms where the lesion is of a nature akin to toxæmia, may we not hope, that as the physiologist shows us the effect of substances like atropin, muscarin or pilocarpin, and curara, on special parts of the nervous organism, the physician, with the advancement of medicine, "in dealing with many forms of paralysis may introduce into the economy a molecular mechanism which, like a very cunningly-devised torpedo, shall find its way to some particular group of living elements and cause an explosion amongst them, leaving the rest untouched?"[b] Until then, if we are not disposed to rely upon the use of drugs which are tested either by scientific experiment or by varied experience, we may comply with a popular demand, and exhibit without risk some of the fashionable but useless drugs, the names of which form, probably, one-half of the contents of the Extra Pharmacopœia.

[a] Sur une cause peu connue de la Tabes Dorsale Spasmodique.—Trans. of the International Med. Congress, Vol. II., 1881, p. 45.

[b] Prof. Huxley. Address on the Connection of Biological Sciences with Medicine.—Lancet, Vol. II., 1881.

ART. X.—*Remarks in relation to State Medicine.*[a] By CHARLES FREDERICK MOORE, M.D., F.R.C.S.I.; President of the Section of State Medicine in the Royal Academy of Medicine in Ireland.

HAVING been elected to fill the position of President of the Section of State Medicine in the Royal Academy of Medicine in Ireland for the present session, I feel deeply the honour which your kindness has conferred upon me, but at the same time I am quite conscious of my inability to discharge the duty which is generally the lot of those in the position in which you have placed me—that of delivering an Address.

I am happy to say that the remark of the late Dr. Todd, of London, is not so applicable to the present time as it was in his day—that State Medicine would not pay those who followed that branch of the profession—although it still holds good in many cases. In corroboration of this we have only to consider the very small remuneration received by the District Medical Officers of Health and the generality of the Consulting Medical Officers of Ireland.

The public, or at least those who hold the purse-strings, seem still to require to be convinced of the value of preventive medicine, forgetting the old adage of "Prevention is better than Cure."

If, therefore, we, when sick, pay willingly for cure, how much rather ought we pay to be saved the loss of time, of health, and too often of life itself, involved in illness?

The public ought to insist on efficiency in the Department of Public Health—to be attained only by enabling able and energetic men to devote their time, energy, and abilities to that department of the public service.

The oft-repeated warnings of the loss of health, and consequently of capital, and it may be of life, caused by the amount of illness too commonly present amongst us, appear thrown away, and many of the old evils of a highly injurious nature still continue to be present in our city, the high death-rate of which rather increases than lessens.

One potent cause of the mortality in cities appears to have operated twenty-four centuries ago just as at the present day—namely, by people from the country crowding into ill-ventilated houses in towns, as mentioned by Thucydides, in reference to the ravages of the plague in Athens.

[a] The Presidential Address to the Section of State Medicine in the Royal Academy of Medicine in Ireland, delivered on Friday, February 3, 1888.

Several years ago the late Dr. Andrew Buchanan pointed out, in his "Lectures on the Institutes of Medicine," in the Glasgow University, what he had observed in reference to the origin and spread of fever in Glasgow; and from its similarity to the statement of Thucydides I think it well to mention it here. Dr. Buchanan said that healthy persons coming to seek employment in Glasgow frequently sickened of fever in lodgings, where the inmates had not fever, from being accustomed, probably, to an atmosphere and surroundings which at once produced disease in those heretofore living in the purer air of the country.

I have frequently observed the same result in Dublin with country immigrants, whom the comparatively vitiated air, overcrowding, poverty, anxiety, with all their attendant evils, often rendered the foci of whatever epidemic existed at the time, or among whom these causes actually created a disease, which then spread to the original residents.

It is but a few days since I visited one of three survivors of a family that a couple of years ago rented two good farms in a prosperous part of the country. Other members of this family died, shortly after coming to town, of fever. It is perhaps right to say that it was not poverty that drove this family to town, but unfortunate connection with illegal societies.

Various, indeed, are often the apparent first causes of illness as it arises in town and country populations, or in those who leave the rural districts to seek employment in the great centres of commerce, manufacture, government, and trade.

Sir Spencer Wells has lately said—"London, which is one of the healthiest, as it is by far the most populous of the European capitals, should be more healthy still;" and Mr. Frederic Harrison, in lecturing on "The Future of Great Cities," spoke of the want of an ample water-supply, protection against disease, the prohibition of excessive hours of labour and of starvation wages, the abolition of overcrowded, ill-ventilated dwelling-places, less drink, and more civilisation. He spoke, too, of the vast size and teeming population of London, and in it how a man had to walk five or six miles from either of the great centres of that city before he could get a glimpse of the meadows or breathe the country air. How different is the position of our Dublin population, and yet how much higher is our death-rate than that of London. Some years ago a species of superstitious frenzy became an epidemic in an out-of-the-way region of Italy, assuming many of the characteristics

of the epidemics of the Middle Ages. What is the account given by certain accomplished French and Italian physicians who visited the district at the time? There the inhabitants seemed to lead a separate state of existence, outside of all civilisation, appearing many centuries behind. The most elementary notions of hygiene had never penetrated the district, and—an example amongst a thousand—the habitations of the people were truly dens having but a single opening, and there man and beast lived pell-mell ("*pêle-mêle*").[a] These were some of the unhealthy conditions amid which these peculiar people lived.

I may here observe that we owe much to the French Medical profession, and the great advance that has been made in the system of teaching pursued in France since the sixteenth century, when Professor Ramus spoke thus of the state of the profession:—"Les herborisations, les dissections, enfin la clinique, tel est le programme d'exercices que Ramus voudrait substituer aux éternelles disputes des écoles. 'Nos facultés, dit-il, ne savent faire que des escoliers disputeurs, qui n'aprennent réellement leur art qu'aux dépens de leurs clients. D'où ce dicton: de nouveau médecin cimmetière boussu.'"[b]

The clear intelligence of Professor Ramus did much for medicine, as well as for other learning in France.

The whole system of medical education in Germany, France, Austro-Hungary, Italy, &c., shows us much that we may copy with advantage, and when I say this I do not for a moment wish to underrate the solid and ever-increasing benefits conferred on medicine, and therefore on mankind, by the British and Irish schools. When I make this remark, I would add that vast quantity of material is not a *sine quâ non* for hospital teaching. Sir Dominic Corrigan made his name with four beds in a hospital.

Before leaving this part of my subject, I would beg to ask the attention of the public and the Government to the handsome prizes given by many of the Continental Governments, as well as by wealthy individuals, for improvements in the several branches of medicine.

The influence of vaccination in preventing variola is a good illustration of the value of Preventive Medicine. According to Mr. G. B. Innes, before its introduction, variola caused from 6 to

[a] L'Union Médicale. 1881.

[b] Gabriel Compayré. Histoire Critique des Doctrines de l'Éducation en France depuis le seizième Siècle. Tome I. 1879. Hachette et Cie. Paris. P. 145.

12 per cent. of the total number of deaths, and although at the present day it does occur, at times causing even a heavy mortality, the average of deaths from this cause, especially in well-vaccinated communities, is extremely small. Many months have, indeed, often passed in Ireland without a single death from small-pox.

I am happy to say that a matter which I brought under the notice of the Chief Medical Officer of the English Local Government Board in 1886, and previously under that of the Medical Commissioner of the Irish Local Government Board—namely, lowering the age for re-vaccination from that of fifteen years, as fixed upon some years since, to twelve, and in case of an epidemic of small-pox, to ten, has been carried out.

I was induced to draw attention to this point from observing the general difficulty experienced in inducing young persons once they attained the age of fifteen to submit to re-vaccination.

In consequence of the difficulties experienced by former pupils of mine in obtaining appointments as public vaccinators in Great Britain, I was led some three years ago to ask the British Medical Association to aid my efforts towards obtaining for Ireland some recognition as a centre for teaching that branch of medical education, and with a successful result.

The occasional occurrence of erysipelas after the operation of vaccination has led to the issue of certain useful Regulations, to be observed in vaccination, by the Local Government Boards in the United Kingdom.

Dr. Henry Tomkins, of Leicester, has done good service in drawing attention to the epidemic of small-pox in Montreal, Canada, as recorded in the *British Medical Journal* lately. A false security had been indulged in, owing to freedom for some years from the disease, and, consequently, vaccination had been much neglected, compulsory powers not being enforced. A man from Chicago, suffering from a very slight attack of variola, so mild as to be mistaken for chicken-pox, was admitted into a large general hospital, and from him the infection spread to several other inmates, and from thence the disease was disseminated in numerous parts of the town, and extended with such rapidity that before the end of 1885 more than 3,000 deaths had occurred. During the progress of the disease so great was the demand for vaccination amongst those who had previously neglected it, that more than 80,000 vaccinations and re-vaccinations were performed in a population of about

160,000; at great expense and by the putting into force of compulsory notification of infectious disease, vaccination and efficient isolation and disinfection, the disease rapidly abated, and by the end of April, 1886, not a case was known to exist in the city. Up to the end of 1885, 3,164 deaths were recorded, of which no less than 2,717 were children under ten years of age, showing how severely these suffered compared with vaccinated communities. From the returns supplied by the hospitals the following figures were given:—The number of patients treated in hospital was 1,332; the deaths amongst these were 418, or 31·3 per cent.; of these patients 805 were not vaccinated and 527 were vaccinated; of the latter 103 died, or 19·5 per cent.; of the 805 not vaccinated there died 315, or 39·1 per cent. As further showing how many more children suffered than adults, who had mostly been once vaccinated, it is to be observed that out of the 1,332 patients admitted into hospital, 489 were under ten years of age and 843 above that age; of the former 202 died, whilst of the latter 216 only died.

The system of medical inspection at the principal ports of the United Kingdom, and also the system of medical supervision by the District Medical Officers of Health, especially in Ireland, form an important safeguard against the spreading of infectious diseases.

Of course, very much of the efficacy of such machinery, so to speak, depends upon the energy and hearty co-operation of the several officers with one another, and the support which they receive from the magisterial and other authorities. For if the detection of even very large adulteration of food, especially of so very important an article as milk, on which so many very young, and therefore very susceptible, persons depend largely for sustenance, is not followed by the infliction of deterring punishment, as was pointed out in some cases which lately occurred in London by the able Medical Officer of Health of the City, Dr. Sedgwick Saunders, little good will arise to the public health or the public morals. In such cases our chief safeguard lies in the action of the medical and general press, to which the community owes so much for its fearless exposure of wrong and vindication of that which is right.

In attempting an explanation of the high Dublin death-rate, I might add of the Irish towns generally, it is necessary to take many things into account. The *Lancet* states in a recent number that the persons over 55 years are in the ratio in Ireland of 133

against 105 in England and Wales. Again, children under 10 and adults between 25 and 45 are considerably deficient in Ireland.

Moreover, the same authority states that the death-rate of Ireland generally is less than in Britain, owing to the greater proportion of rural population in Ireland to that of the towns, as compared with England. The same journal adds—"It is evident that the recorded death-rates in England and Ireland, unless corrected for difference of age-distribution, are not fairly comparable." In connection with the foregoing, I would add, from my own observation, that in Dublin a very large number of our people consist of very old, of feeble half-fed female adults, and of very young children, whose frames are debilitated by want and neglect, and, what applies to our poorer classes of every age and each sex, they are badly clad, and if possible worse housed; not only are the wretched tenements of the great majority of the poor defective in almost every way, but they are also in many cases in close proximity to slaughter-yards, cattle and dairy-yards, where, notwithstanding all that has been said and written, vast quantities of manure and offal are still in very many cases collected.

While such things exist, the air and the soil in the vicinity are usually much polluted.

It is very true that the Liffey foreshore, that lies uncovered at low tide, is the cause of much foulness, and nothing has been done at all effectively in remedying this state of things, although many suggestions in the way of sloping and concreting the parts that are now exposed at low tide have been frequently recommended. If this were done, and the Liffey waters stored up the country by sluices or reservoirs, to be used for scouring the bed of the river in dry and warm weather, when disinfectants might then also be used much more effectively than is now done, the state of matters would be much better than at present.

I, therefore, regret that I cannot congratulate the citizens of Dublin on any material improvement in the Public Health, nor do I expect to be able to do so, so long as the old system of ill-kept dairy yards is allowed here.

Pleuro-pneumonia amongst cattle and that, at times, and other zymotics amongst ourselves, as well as permanent debility and proneness to sickness and mortality, must exist here so long as the present insanitary condition of many parts of our city continues, from wretched tenements, whose broken floors form the receptacles

for refuse, often of a contagious kind, made more injurious by the damp from defective roofs and walls, from crowded *cul de sacs* of courts, piggeries, and manure heaps—all tending to demoralisation and sickness, intemperance and vice, in a people capable of far better things, from their innate *bonhomie* and ability.

I subjoin authentic figures[a] showing the birth and death-rate of the largest city in Europe, if not in the world, but I will not contrast them with those of Dublin specially, as I think you all know the latter but too well:—

Birth-Rate.

	City of London	United Kingdom	The Metropolis of London (including the City of London)
1885 ...	16·1	... 31·2	... 32·5[b]
1886 ...	16·2	... 31.2	... 32·3
1887 ...	15·4	Average of 9 months } 30·5	Average of 9 months } 31·8

Death-Rate.

	City of London	United Kingdom	Metropolis of London (including the City of London)
1885 ...	14·6	18·9	19·6
1886 ...	14·5	19·0	19·9
1887 ...	13·5	18·7	19·4

The Liffey is not alone to be blamed for much of our high death-rate, the condition of certain barracks within the city precincts call for immediate attention to stop a mortality from enteric fever which has attained such proportions as to demand most serious consideration.

[a] Kindly furnished to me by Dr. Sedgwick Saunders.

[b] This year was remarkable as showing the lowest Marriage and Death-rates in London on record, and the lowest Birth-rate since 1850.

The advocates of a great main drainage system must have received a serious warning from the recent fatality attributed to sewer gas at Sandymount.

Sir William Aitkin's work[a] on the animal alkaloids—the ptomaïns, leucomaïns, and extractives in their pathological relations—brings before the reader the recent researches as to the origin of some diseases, by or through the physiological processes going on during life. The author points out how important Preventive Medicine is to the military medical officer. We, as civilians, should claim its vast importance to the thousands under our care, especially those of us who hold appointments as Medical Officers of Health, and in our relations to factories, workshops, colleges, schools, as well as places of public resort for public worship, meetings, concert-rooms, theatres, not forgetting the numbers of persons in large mercantile establishments, in ships, railways, hotels, &c. Following the example of Sir William Aitkin, in his advice to the younger members of the Army Medical Department, I would ask those whom I have the honour of addressing, especially the younger members of the Academy, to cultivate the study of Pathology in its relations to the living as well as to the dead.

I regard with great satisfaction the inauguration of a Lectureship of Pathology in the Dublin University Medical School—the first of the kind in Ireland as I believe, and I hope that the excellent example so set may be followed elsewhere, though we can hardly at once expect to see the fulfilment of such a wish, especially in equally able hands. It has often been said that once a good beginning is made the work is half done.

Speaking of the researches of Lepine, Guerin, Aubert, A. M. Brown, Lauder Brunton, Gautier, and others, Sir William Aitkin observes:—"There is in these researches still further disclosed the fact that in this auto-infection, this spontaneous or self-infection of the living organism by the 'alkaloids' and 'extractives' of its own formation, there is no question of quality, but simply one of quantity to be considered, by reason of the essential physiological source and action of the poison. In other words, the healthy living organism may become poisoned (more or less slowly) by the accumulation within itself of deleterious substances normally elaborated, but imperfectly or defectively eliminated. Hence the slow and insidious onset of much ill-health, and from which

[a] London: H. K. Lewis. 1887.

recovery is correspondingly slow. I might here instance all the 'constitutional' diseases of which rheumatism and gout are typical representatives. They are such diseases as become developed under the influence of agents generated within the body itself through the continuous exercise of its functions in the daily course of nutrition, development, and growth."[a]

An important aspect of the question now presents itself for solution—namely, "In what way does this auto-infection or spontaneous poisoning of the system take place?" This is a very complex question, and as Dr. A. M. Brown observes—"It can only be understood and explained by the mode in which we regard the phenomenon of life. Life is undoubtedly an active state, the result of the combination of many physiological processes, in the concurrent exercise of the bodily functions which are essentially relative and contingent on one another, implying at the same time a series of partial and local deaths. Thus it is that our organism lives on conditions of incessant elementary disintegrations, so that 'we constantly bear about within us the effete *debris* of our living selves.'

"Health must therefore always, and can be only a phenomenal phase of life which is relative and contingent; life's equilibrium between the rough and the smooth, the ease and the unease, the good and the evil; when the vital functions are performed in a united and harmonious manner, which experience has taught us to regard as normal; and as the wholesome unity which constitutes health."[b]

Further on Sir W. Aitkin writes:—"And it will further appear in the following pages that 'the vital processes are much more readily arrested by the accumulation of waste products within the organs of the body than by any want of nutriment of the organs themselves,'" or in words quoted, if my memory bears me rightly, by the late Sir Thomas Watson, from a judicious and plain-spoken physician, a friend of his early days of practice, who endeavoured to convey to a well-to-do London merchant a sound pathological precept thus—"If the imports exceed the exports there is a clog in the market." Far different from the condition of the London merchant is the case quoted by the writer, whose recent work I have so freely availed myself of in this address, of the young man suffering from "the fever of over-taxation" or of "over-exertion," as stated by

[a] Science and Practice of Medicine, 7th edition, Vol. I., p. 829.

[b] Medical Pathology, by H. G. Sutton, 1886, p. 2.

the illustrious French physician, M. Chomel, who, after careful examination of his patient, gave his diagnosis in Latin, thus—"*Aut febris Peyerica, aut variola incipiens.*" Such cases of temporary poisoning from accumulation in the system of material elaborated in excess and inefficiently (or inadequately) eliminated is not infrequently seen in military and civil life under like conditions, and well it is for the patient if the doctor's diagnosis is similarly only at fault, and that needed rest can be obtained.

Public or Preventive Medicine may be considered under the following heads:—

As regards the duty of the Government and the appointed local authorities and the Medical Staff towards the public generally in the matter of maintaining the health of the people at large, the army, navy, and the other branches of the Government, revenue, police, &c., the care of the sick in workhouses, hospitals, asylums, gaols, &c.; also in relation to schools and factories. Under this head is included the food supply, water, public buildings and dwellings for all classes, modes of conveyance ashore and afloat, the drainage of districts both urban and rural; also vaccination and education.

And secondly, in its relation to families and individuals, their dwellings and surroundings, their food, their clothing, their occupation, exercise, and recreation; in these, which may be called individual matters, the boundaries of medical practice and preventive medicine seem to run into one another, each being largely founded on physiology and biology, as well as upon the pathology of the living body, as we have seen above.

ART. XI.—*The Medico-Legal Aspects of the Coachford Poisoning Case.*[a] By C. YELVERTON PEARSON, M.D., Q.U.I., F.R.C.S. Eng.; Professor of Materia Medica and Lecturer on Medical Jurisprudence, Queen's College, Cork; Fellow of the Royal Academy of Medicine in Ireland.

OWING to the very deep interest which has been recently aroused in this country and elsewhere, both in the minds of the public in general and of the medical profession in particular, by an

[a] Read before the Section of State Medicine of the Royal Academy of Medicine in Ireland, on Friday, February 3, 1888. [For the discussion on this paper, see page 268.]

important criminal trial for wife-murder in which I happened to be engaged as the principal medical witness, I think it desirable to bring under the notice of the profession the chief scientific facts, together with such other points in the evidence as seem to me to be relevant to a consideration of the medico-legal aspects of the case. I also trust that the paper I now bring before you may serve the purpose of a permanent record, and consequently, in order that it might become intelligible to those of my future readers who can have no other means of becoming acquainted with the history of the case in all its bearings, I have felt compelled to introduce many matters of evidence of a non-medical nature. I regret that in doing so the present article has assumed proportions far beyond either my original intention or desire.

The main facts of the case, which will probably be most familiar under the title of the "Cross case," are briefly these:—

History of the Case.—Mary Laura Cross, wife of Surgeon-Major Philip H. E. Cross, of Shandy Hall, Dripsey, in the County of Cork, died on the morning of June 2nd, 1887, and was buried at 6 30 on the morning of June 4th.

During her illness, which lasted about three weeks, she was attended chiefly by her husband, and was on only one occasion seen by another medical man, nor had she any regular nurse, being left to the care of Mr. Cross's sister and the servants of the house. A few days after the funeral Mr. Cross went to England, and returned home on June 21st, and on the following day he paid a visit to the house of a Mrs. Caulfield, who, owing to a letter that she had just received, accused him of having, during his absence, got married to a Miss Skinner, who had formerly been in his employment as a governess. He denied the accusation and went away. He again left home on the 24th of June, and returned on the 26th, bringing with him Miss Skinner, as his acknowledged wife. Suspicion was aroused, and owing to evidence received by the authorities, the body of the late Mrs. Cross was exhumed. A *post-mortem* examination was made, which proved that death was not due, as had been certified by Mr. Cross, to typhoid fever, nor yet to heart disease, from which it was stated that she suffered, but indications of irritant poisoning were discovered. An analysis was made of the viscera, which disclosed the presence of arsenic in poisonous quantity, and also a small amount of strychnin. It also became known, from the evidence of a Miss Jefferson, that

the symptoms presented by Mrs. Cross during her late illness corresponded with arsenical poisoning. Mr. Cross was arrested on the charge of murder, and was tried at the Munster Winter Assizes before Judge Murphy and a special jury. The trial, which commenced on the 15th of December, 1887, extended over four days. The prisoner was found guilty, and was sentenced to be hanged, and was accordingly executed on the 10th of January, 1888.

In dealing with the consideration of my subject, two methods of treatment suggested themselves—viz., either to detail the various portions of the case and discuss it as a whole, or else to comment on each part separately, according as it is related. With the object of making myself as clear as possible, I have chosen the latter method. Whether I have been wise in my choice I leave to your judgment.

Post-mortem.—I now proceed to state briefly the main points observed in the *post-mortem* examination, without entering into unnecessary detail, nor shall I mention the facts in the exact order in which they were observed.

The necropsy was made in the Courthouse of Coachford on July 21st, 1887—that is, seven weeks after death.

At this examination I had the assistance of Dr. Timothy Crowley, of Coachford. The coffin (an oaken one) was examined and found to be unbroken, and when opened the body was identified in my presence. It was clothed in a white garment, inside which was placed a flannel swathe encircling the abdomen; a white handkerchief passed beneath the lower jaw and was tied over the vertex of the skull; the deceased had also on a pair of blue stockings.

The body was fairly nourished; the features were drawn; a brownish *post-mortem* slime was issuing from the nostrils and mouth. The face and hands were covered with a white mould. Extensive greenish discoloration was present on the abdomen, chest, back, and left side of neck. The dorsal aspect of the trunk and limbs exhibited evidences of the usual cadaveric ecchymoses. The cuticle had separated on the back and some patches of the limbs. No external marks of violence were discernible.

The internal examination showed the absence of any evidences of violence to the larynx, trachea, &c. The lungs were healthy, and presented the usual evidences of *post-mortem* hypostasis at their posterior borders. The left pleural cavity contained two

ounces of a *post-mortem* effusion of blood-stained serum, while the right held a smaller quantity. The heart and pericardium were found to be perfectly natural, the right cavities being moderately full of blood, the left being nearly empty. The thoracic viscera, with the exception of the larynx and trachea, were free from putrefactive changes.

The examination of the abdominal cavity showed the peritoneum to be quite healthy. The omentum was healthy, and contained a moderate amount of fat. The intestines were moderately distended with gas. All the organs were in an excellent state of preservation, the stomach and intestines presenting as fresh an appearance as if deceased had died but twenty-four hours previously. The only evidences of putrefaction present in the abdomen were found on the liver, which displayed early putrefactive colour changes, and had a considerable portion of its surface studded with small white spots, due to the *post-mortem* deposition of phosphate of calcium; the gall-bladder contained a small amount of bile; the spleen and kidneys were healthy; the bladder was empty; the uterus and ovaries presented a healthy appearance.

I shall now describe the appearances found on examining the interior of the alimentary canal. There was nothing peculiar in the mouth or pharynx. The lower end of the œsophagus contained a number of white particles, the largest being the size of a small pin's head; towards its termination in the stomach the mucous membrane presented a number of oval abrasions about $\frac{1}{20}$ to $\frac{1}{12}$ of an inch in length; the membrane was also congested throughout. The stomach contained a small amount of slimy mucus; also a number of hard white particles, some of which were free, while others were partially embedded in the mucous membrane; the mucous membrane itself seemed perfectly healthy. The small intestines were coated on their interior in many places with patches of slimy mucus, of a bright yellow colour; a few white particles, similar in appearance to those found in the stomach, were present at the upper end of the duodenum. The coats of the greater portion of the duodenum, and adjacent few inches of the jejunum, showed extensive congested patches of a bright red colour. The mucous membrane of these portions of the gut was swollen and injected; the remaining portion of the small intestine was perfectly healthy. The large intestines were healthy, and contained only a small quantity of slimy mucus; no fæces were present in any portion of the bowel.

Remarks on the Post-mortem Examination.—The conditions above described clearly indicated that deceased had not died of typhoid fever, as certified by her husband; the condition of the heart and blood-vessels also proved the absence of any organic disease of these parts that would account for death. The appearances related as being present in the alimentary canal clearly must have resulted from the action of an irritant, and it was evident from the condition of the intestines that free purging of a bilious character must have preceded death. From the condition of the œsophagus, and the empty state of the stomach, one might naturally also conclude that vomiting, probably of a painful character, had existed during life; and the remarkable state of preservation of most of the abdominal viscera pointed almost certainly to *arsenic* as the agent, and subsequent analysis proved this to be the case.

As an example of the *post-mortem* appearances resulting from arsenic, the case presents a few remarkable features, first of which may be mentioned the presence of congestion and abrasions in the œsophagus; and second, the absence of any of the usual characteristic lesions of the stomach. With regard to the former, Taylor ("On Poisons") states that "in some instances the mouth, pharynx, and gullet, have been found inflamed; but in general there are no appearances in this part of the alimentary canal to attract particular attention."

In Blyth ("Poisons: their Effects and Detection") we find the following paragraph:—"The inflammatory and other changes rarely affect the gullet. Brodie never observed inflammation of the œsophagus as an effect of arsenic; but when arsenic is swallowed in the solid state, as in the suicide of Soufflard, graphically described by Orfila, it may be affected. In Soufflard's case there was a vivid injection of the pharynx and gullet." That arsenious acid was swallowed in the solid form, in the case I am detailing, was proved by the analysis. On the other hand, the absence of any characteristic appearances in the stomach is by no means uncommon. Several cases are recorded where no special *post-mortem* appearances in any of the organs were discovered. In Woodman and Tidy's work on "Forensic Medicine and Toxicology" (p. 138) a statement occurs—"That the more gradual the poisoning the more manifest is the action of the poison on the intestines, and the less manifest its action on the stomach." With regard to the intestines, as a rule, the effects of arsenic manifest themselves

only in the duodenum and the rectum, though in some instances the mucous membrane of the small intestine has been inflamed throughout. In the case under discussion the effects were apparent in the duodenum and a small part of the adjoining jejunum; the mucous membrane of the rectum was not, I regret to say, minutely examined, the absence of fæces merely having been ascertained.

I take the following quotation from Blyth (*op. cit.*, p. 518):—"When arsenious acid is swallowed in substance or solution, the most marked change is that in the mucous membrane of the stomach and intestines; and even when the poison has been absorbed by the skin, or taken in any other way, there may be a very pronounced inflammatory action. On the other hand this is occasionally absent. Orfila relates a case in which a man died in thirteen hours after having taken twelve grains of arsenious acid—'The mucous membrane of the stomach presented in its whole extent no trace of inflammation, no redness, and no alteration of texture.' Many other similar cases are on record; and according to Harvey's Statistics, in 197 cases, 36 (about 18·2 per cent.) presented no lesion of the stomach."

It is worthy of note, the liver presented evidences of putrefactive changes, notwithstanding that it contained, as will be shown, a considerable quantity of arsenic. Taylor (*op. cit.*) states that "absorbed arsenic does not appear in all cases to prevent the decomposition of the soft organs in which it is deposited." The putrefactive changes found in this organ were, however, very slight, considering the length of time that had elapsed since death. I may here mention that a slight amount of fatty degeneration was found to exist in this organ on microscopical examination. This is a tolerably common result of slow arsenical poisoning.

So far as could be ascertained the sub-endocardial ecchymoses, so frequently found in cases of slow arsenical poisoning, were not present, though I think it quite possible, notwithstanding the excellent state of preservation of the heart, they might have become effaced even if present at death.

As relating to the putrefactive changes present, I think it well to mention that the grave where deceased was interred was situated on slightly elevated ground, and dug to the usual depth; the soil consisted of ordinary clay of a somewhat porous nature; it was quite dry when seen by me—this of course corresponded with the time of year and the unusually hot and dry summer. No chemical

examination of the clay was made for arsenic, as would have been done if the coffin was broken.

No examination was made of the contents of the cranial cavity—a fact which I am disposed to think might readily excite some unfavourable criticism. It is only right to state that I alone am responsible for this omission, as Dr. Crowley, who assisted me at the *post mortem*, suggested that it should be done. The following were the reasons which led me to determine that it was unnecessary:—1. Had deceased manifested any symptoms indicative of cerebral affections during life, I think it certain that Mr. Cross (whether innocent or guilty) would have indicated the fact in the death certificate. 2. The appearances present in the alimentary canal did not correspond to any form of brain affection. 3. I was satisfied that I had discovered sufficient causes to account for death. 4. Even had an examination of the brain or its membranes revealed the existence of any organic disease, the undoubted evidences of irritant poisoning would still remain unaccounted for. Therefore, while I freely admit it would have been advisable to make such an examination at the time, both to render the *post mortem* more complete and to avoid the possibility of adverse criticism, I still hold that under the existing circumstances such examination was not a matter of necessity. It may here be mentioned that at a subsequent period, when the brain was removed (as will be described later on), no coarse pathological appearances were present; and it is certain that no minute lesions could have been discovered at the time the first exhumation took place, owing to the histological changes which must inevitably have occurred during the interval between death and the date of examination—viz., forty-nine days.

Analysis.—The stomach and attached portion of the small intestine, which, along with the lower end of the œsophagus, were contained in a sealed and stoppered glass vessel, were first examined. The stomach contained one drachm of mucus, but no food. Several white particles were found all over the mucous membrane; some of these were free, others attached, or partly embedded in the membrane; some of them were distinctly hard, others not so. The majority of the particles were smaller than an ordinary pin's head. A few of these were removed, dried over a water bath, and then heated in a subliming cell; they yielded a small crystalline sublimate of arsenious acid. A few others were treated by the reduction test, and yielded a faint ring of metallic arsenic.

Some more of these particles were dissolved in distilled water and hydrochloric acid, and were treated by Reinsch's process, and yielded a deposit of metallic arsenic, which, on being sublimed, gave crystals of arsenious acid. The interior of the stomach and duodenum were scraped with glass; these scrapings were dried with a gentle heat over a water bath, and were further placed to dry in vacuo. Particles similar to those in the stomach were present in the lower end of the gullet; these, on analysis, were also found to contain arsenic. Portions of the coats of the stomach and duodenum were separately treated by Reinsch's method and found to contain arsenic; these viscera were then carefully dried and set aside for further analysis. The liver, spleen, and right kidney, were contained in a large sealed glass vessel; the bloody fluid contained in this vessel, which had exuded from the contained organs, was tested by Reinsch's method, and was found to contain arsenic in considerable quantity. Portions of the liver, kidney, and spleen, were each separately tested by Reinsch's process and found to contain arsenic—the liver in largest amount, the kidney in smaller quantity, while the spleen contained only a trace. The pieces of copper, employed in Reinsch's process when testing the liver and kidney, were heated separately in subliming tubes, and yielded sublimates which, under the microscope, were found to consist of distinct crystals of arsenious acid. The tubes employed, along with those used in some of the above tests, were sealed, labelled, carefully preserved, and were subsequently produced in court. A portion of the liver was divided in small pieces and placed to dry on a water bath.

The dried scrapings from the stomach, along with this organ and the duodenum, were divided into two portions, one part being employed for the quantitative estimation of arsenic, while the other portion was treated with acidulated alcohol, for the extraction of alkaloids. The first portion was placed in a flask of pure hydrochloric acid, and distilled with the heat of a sand bath; when all the acid had come over, the residue was again drenched with a further quantity of pure hydrochloric acid, and distilled until left in a dry condition—the dried residue being subsequently examined for fixed metallic poisons. The acid distillate was divided into two portions; one-fourth was introduced into a modified form of Marsh's apparatus (the purity of which, as well as that of the materials employed, had been previously ascertained) and proved to contain arsenic. The remaining three-fourths was rendered

free from organic matter; a current of pure sulphuretted hydrogen was passed through it for some hours; the precipitate of sulphide of arsenic was subsequently collected, dried, and weighed, and an estimate formed of the amount of arsenious acid present in the entire organs—namely, the stomach and duodenum; this estimate amounted to 1·74 grains. The portion of the stomach and duodenum and their contents, which was treated by a modified form of Stas' process, yielded a final extract, which was distinctly and persistently bitter, and when subjected to spontaneous evaporation gave a small crystalline residue, that yielded the colour reaction of strychnin in the most distinct manner, and formed with chromate of potassium characteristic microscopic crystals of strychnin chromate.

Portion of the small intestines was examined by Reinsch's process and found to contain arsenic. One-fifth of the entire liver, which had been previously dried, was extracted with hydrochloric acid, and the arsenic was weighed, as in the case of the stomach, as a sulphide; the result of approximate estimation indicated that this organ contained 1·28 grains of arsenic; thus the total amount of arsenic estimated amounted to 3·02 grains. This being a poisonous quantity, it was not thought necessary to make any quantitative estimation of the arsenic contained in the remaining viscera, more especially as they were preserved with the object of obtaining from them, if possible, an additional quantity of strychnin.

It may be well here to mention that in my evidence at the magisterial inquiry, and also in the report which I furnished, I stated that the liver contained over three grains of arsenic, and I think it only fair to myself to afford an explanation of how this mistake arose. At the period during which I was conducting the analysis I was also acting as one of the Sectional Secretaries to the British Medical Association, and was at the same time making private arrangements to leave town on my annual holiday. The quantitative analysis of the stomach and duodenum was completed on July 27th; that of the liver on the 28th; the search for alkaloids was ended on the 29th; the examination for other metallic poisons took place on Saturday, the 30th. On that night, in addition to a large amount of other writing, I wrote a full report on the *post-mortem* examination; and thus, owing to the pressure on my time, I was compelled to write my analytical report on the night of Sunday, the 31st., as it had to be handed in early on the following morning. Unfortunately, when I came to do it, I

found that my notes on the quantitative portion of the analysis (which was on a separate sheet of paper from the rest) had been left in my private room at the College where the analysis had been made. I therefore had to trust partially to memory; and as the liver was the last of the organs which I had been engaged at, and as I was impressed with the idea that it contained a large amount of the poison, and, moreover, I had the quantity (*three grains*) firmly fixed in my mind, I wrote the words—"This organ, which was specially subjected to quantitative analysis, contained over three grains," instead of the words—"The organs, which had been specially subjected to quantitative analysis, together contained over three grains." The following morning (Monday, Aug. 1) I was so busily engaged up to the time the magisterial investigation took place—viz., 10 a.m., in seeing my patients, that I had not a moment to go to the College for the missing portion of my notes. This I certainly would have done, even at the greatest inconvenience, were it not that I placed (as it appears) too much reliance on my own memory. In giving my evidence before the magistrate, as I was examined from my report, I naturally repeated my mistake, and after signing my deposition I almost immediately left for Dublin, as the meeting of the British Medical Association was about to commence the following day. After the Dublin meeting terminated I went on my holiday, of which I stood in much need, and returned to Cork on August the 22nd. As, however, I entertained no doubt of the correctness of the evidence I had given, I never became aware of my blunder until I was looking up my notes a short time before the trial. The moment I discovered the mistake I immediately acquainted the Crown Solicitor with the fact, who served notice to a similar effect on the prisoner's solicitor.

At the trial (as was most natural) counsel for the defence sought to make the most out of this error, and quoted the following passage from Wormley on "Micro-Chemistry of Poisons," p. 299:—"Absorbed arsenic is deposited to a greater or less extent in all the soft tissues of the body, and any of these may be made the subject of analysis. The greatest relative quantity, however, is usually found in the liver. The absolute quantity thus found, even under the most favourable circumstances, rarely exceeds a grain in weight." From this he endeavoured to make the jury believe that anyone who could be so ignorant as to make a statement to the effect that a human liver contained three grains of

arsenic was unworthy of any confidence, and that consequently they were to disregard the entire of my evidence. Now I think it will be readily conceded by medical men that this, as I shall endeavour to show, by no means implies the absence of an extensive knowledge of toxicology; for we may search throughout the works of Christison, Taylor, and Blyth, on Poisons, and the standard work on Medical Jurisprudence by Taylor, and that by Woodman and Tidy, and not find a single statement in any of them that would justify us in arriving at a conclusion on the subject. It is only by looking over the records of a large number of analyses that one would obtain any reasonable idea of the quantities of the various poisons that are usually present in the individual organs after poisoning has occurred; and these quantities will necessarily vary enormously in different cases according to the dose administered, and a number of other circumstances which it is unnecessary to mention. Of course in any given case an analyst would merely give a statement of his own results; and, whatever be the quantity of poison found by him, it would be his duty to state it irrespective of the results obtained by others in any number of other cases. Therefore I trust I have said sufficient to convince my hearers that a statement to the effect that a human liver contained three grains of arsenic did not necessarily indicate that the person who made it was deficient in toxicological knowledge.

In the work of Wormley, just referred to, in speaking of the quantity of arsenic present in the liver, the following passage occurs:—"According to the observations of Dr. Geoghegan, this organ usually receives its greatest quantity in about fifteen hours after the poison has been taken, when it may contain as much as two grains." I regret that I have been unable to discover any record of the observations on which this statement is based; accepting it, however, as being correct, while I readily admit that there is no recorded instance of such a quantity as three grains having been found in the liver, still I feel bound to maintain that no one can deny the possibility of such an occurrence under exceptional circumstances.

The statement of Dr. Geoghegan goes to show that from the large quantity of arsenic present in the liver of Mrs. Cross, we may arrive at the opinion that the last dose of the poison in her case must have been administered or taken at a comparatively short period before death—probably within twenty-four hours.

The additional points in the analysis which seem to call for

special observation are the following:—The presence of arsenious acid in the alimentary canal, in solid form, was a proof that some, if not the entire, of this poison had been taken, or administered, in an undissolved state. The white particles described as being present in the stomach and elsewhere, in addition to arsenic, contained organic matter and the usual *post-mortem* deposits of lime salts. The bright yellow colour of the contents of the small intestines is to be attributed both to the presence of bile and to the partial conversion of arsenious acid into the yellow sulphide of arsenic.

The purity of all the materials was carefully determined, both before and after the performance of the various experiments, and Reinsch's process was selected as a general preliminary test, because of the ease with which it may be applied, and when carried out *with due precautions* and verified by the production of a crystalline sublimate, it is absolutely characteristic and beyond all possibility of error.

It may be said that the method of quantitative analysis employed was somewhat old-fashioned; no doubt this is the case, but all chemists are agreed that it gives results almost as satisfactory as any other, and is therefore still in favour with many. Had I the appliances all ready at the time of making the analysis, I would probably have selected Bloxam's method in preference, as being more cleanly and easier of application.

Owing to the fact that strychnin *in small quantity* had been detected in the stomach, it became a most important matter for evidence to discover, if possible, whether this substance had been taken or administered in *poisonous quantity;* therefore I preserved for subsequent examination those portions of the viscera that were not used up in the analysis I have already described; and on my return home I made application to the authorities to have the body of Mrs. Cross re-exhumed. The necessity for doing so is well set out in the following passage from Blyth "On Poisons" (p. 320):—"Should search be made for minute portions of strychnin in the tissues, considering the small amount of the poison which may produce death, it is absolutely necessary to operate on a very large quantity of material. It would be advisable to take the whole of the liver, the brain, spinal cord, spleen, stomach, duodenum, kidneys, all the blood that can be obtained, and a considerable quantity of muscular tissue, so as to make in all about one-eighth to one-tenth of the whole body. This may be cut up into small pieces, and boiled in capacious flasks with alcohol, acidi-

fied with acetic acid. . . . . It is only by working on this large scale that there is any probability of detecting absorbed strychnin in those cases where only one or two grains have destroyed life, and even then it is possible to miss the poison."

Accordingly, having obtained the desired permission, the body was again exhumed on the morning of August 23rd, when I removed the heart, lungs, remaining kidney, brain, and a large mass of muscle from the thigh. I may here remark, in passing, that notwithstanding the previous exposure, the body presented very little additional evidence of putrefactive changes than those present at the time of the first exhumation, the flesh from the thigh being of a bright red colour, and as free from putrefaction as if death had only occurred twenty-four hours previously. All the parts now removed, together with those preserved from the former chemical examination, were carefully treated by a modified form of Stas' process for the separation of strychnin, with the result that slightly less than the one-hundredth of a grain was obtained in a crystalline form.

Since the occurrence of the Cross trial, the statement has been made, both in articles which appeared in journals, some of which were of a scientific nature, and in the letters of some correspondents, that strychnin is a substance which undergoes rapid destruction in dead bodies; such a statement is quite erroneous. I again quote from Dr. Blyth's work:—"At one time it was believed that strychnin might be destroyed by putrefaction, but the question of the decomposition of the poison in putrid bodies may be said to be settled. So far as all evidence goes, strychnin is an extremely stable substance, and no amount of putrescence will destroy it. M'Adam found it in a horse a month after death, and in a duck eight weeks after; Nunneley in fifteen animals forty-three days after death, when the bodies were much decomposed; Roger in a body after five weeks' interment, and lastly Richter in putrid tissues exposed for eleven years to decomposition in open vessels."

A number of my critics, and several of my best friends, have remarked that it was strange, in a criminal case of such grave importance, that I did not seek the assistance of a second analyst, more especially as this was the first case of arsenical poisoning in the human subject which I had an opportunity of investigating. Now, I am quite willing to admit that, as a rule, it would be advisable in all cases where the life of a human being is at stake

to have two skilled experts employed, but this, I submit, is a matter for the State to determine.

There is no doubt that the presence of a second expert would greatly lighten the burden of responsibility and divide the distribution of counsel's abuse, though the latter is a matter of insignificance. But in this instance (owing to its being the first), had I asked for assistance, in all probability the Crown would have handed the work over to some one who would be willing to undertake the entire responsibility; and in any case unfriendly critics would say that I must have felt myself incompetent for the duty, and would therefore give all the credit of the work to my *confrère*. It may be well further to point out that I have been engaged more or less for the past twelve years in chemical studies and pursuits, a considerable portion of which were of a physiological nature; that I acted as assistant to my predecessor, the late Dr. O'Keeffe, in preparing experiments for his class, and in numerous organic analyses; that since my appointment as Lecturer on Medical Jurisprudence in the Queen's College, I have repeatedly extracted poisons of different kinds from the bodies of various animals and organic mixtures; that I have made it a regular custom to perform for my class the experiment of extracting arsenic from portions of bodies taken from the dissecting-room, into which this substance has been injected for the purposes of preservation; that there is absolutely no difference whatsoever to be observed in the process of extracting poisons from human viscera and that employed when dealing with other organic matter; and finally, that arsenic is one of the most easily-separated and readily-demonstrable of all poisons; therefore the observation of counsel that somebody who had previously extracted arsenic from the body of a person who died from the effects of this poison should have been employed, goes for absolutely nothing; and I think it is not to be much wondered at that I felt under no need of any assistance. On calmly reviewing the whole matter, with the knowledge now at my disposal, while it is possible (now that I trust my competency might not be so much questioned) that if a future case arose I might apply for some aid, still if the whole circumstances were to occur over again I should undoubtedly act in precisely the same manner as I have done.

Symptoms during Life.—Very distinct evidence was produced to show that the late Mrs. Cross presented well-marked symptoms of arsenical poisoning during life. Thus, it was sworn by Dr. Godfrey that he saw her eight or ten days before death, that she

seemed to be suffering from a bilious attack, and had a damp handkerchief round her forehead; he was satisfied she was not suffering from typhoid fever. She was seen by Mrs. Caulfield on May 25th, and was then suffering from vomiting, thirst, and diarrhœa, but the chief evidence was that of a Miss Jefferson—a friend of the deceased—who was staying on a visit in the house, and who was enabled to give a very accurate account of the symptoms from notes she had made in her diary. This lady swore that Mrs. Cross was ill and confined to bed on the 10th and 11th of May; she seemed to have an attack and spasm of the heart, with cramps, sick vomiting, and diarrhœa. She was suffering in a similar way on the 13th and 14th, and again on the 16th and 17th. She was better on the 18th, and went for a walk, drove to church on the 19th, and took dinner with the family on that day. She was ill again on the 20th and 21st, had pain in the upper part of her stomach, or heart, with vomiting and diarrhœa, and was drowsy. On the 22nd she was better, and went into the garden. This was the last time she was out. She was very ill in bed on the 24th, with vomiting and diarrhœa. She had the same symptoms, but in a worse form, on the 26th, which alarmed the witness. On the 27th she complained of great pain in the forehead, and the eyes became affected; they seemed irritated and inflamed, and she complained that she could not see things at a distance distinctly, and could not see to read or write. On the 29th she was very ill with the same symptoms as before, but much weaker. The same symptoms were present, to a greater or lesser extent, on the 30th and 31st, and the 1st of June, but she was gradually getting weaker, and was frequently drowsy; and it appears that she died either on the night of the 1st or on the morning of the 2nd of June. Her head seemed clear, and she was quite intelligent, being able to describe her state and to express her wishes. Miss Jefferson, at an early period of Mrs. Cross's illness, saw her getting a dose of what was said to be gentian; this appeared to make her sick. She also saw Mr. Cross give her chlorodyne, which seemed to make her very drowsy and stupid. Evidence of a similar nature regarding her symptoms was given by the servants of the house; one of whom (Mary Buckley) swore on one occasion she saw Mr. Cross taking up some chicken broth; she saw Miss Cross on various occasions taking up sago, bread and milk, &c. She had often heard Mrs. Cross complain of her heart previous to her late illness, and had seen her stop and put her hand to her heart when going up stairs, as if she was panting.

On the night of Mrs. Cross's death, when sleeping in a room with two other servants, she awoke suddenly and heard Mrs. Cross screaming, as if in pain; this lasted four or five minutes.

Mary Magrath (housemaid) attended on Mrs. Cross during her late illness; she saw her get on different occasions, in addition to drinks, sago, corn-flour, and chicken broth. On one occasion she saw Mr. Cross, a few days before death occurred, give her a dose of chlorodyne; this was taken from a bottle on the mantel-piece, and Mr. Cross poured it into a minim glass, which he did not fill. This dose made her vomit just after taking it. She (Mrs. Cross) said it made her sick, and she wished she had not taken it. The witness also swore that deceased was, owing to the condition of her eyes, unable to read her letters on one day; that she suffered from vomiting, diarrhœa, and pains in the region of her heart; that she was almost continuously vomiting for the two or three days immediately preceding death; that the vomited matter was yellow or greenish-yellow. This witness, in addition, stated that she saw Mrs. Cross (previous to her late illness) get fits on three occasions; she got stiff, clashed her teeth together, used to fall down and complain of her heart. These attacks lasted about ten minutes, when her mistress was again able to get about. Evidence was also given that Mrs. Cross was supplied with various drinks—*e.g.*, toast-water, lemonade, &c. Any additional points in the evidence which are necessary for my purpose I shall refer to later on.

Now, from the evidence above detailed, more especially that of Miss Jefferson, it seems clear to me that we may deduce the following:—1. That the late Mrs. Cross presented during life very well-marked and unmistakable symptoms of slow arsenical poisoning. 2. That from the distinct intervals of remission which occurred, followed by a return of the symptoms with increased severity, it appears that the illness was due to several successive and increasing doses of the poison. 3. That it is impossible to conceive that any medical man could be under the impression that this was a case of typhoid fever.

A large number of bottles and packets were removed from the surgery of Mr. Cross immediately after his arrest; several of these were specially selected and submitted to me for chemical examination. Amongst them were three packets, marked "Dog Poison," which contained strychnin in a crystalline and almost absolutely pure state; the largest of these held over 86 grains. There were

five bottles containing tartar emetic in variable quantities, and there was an 1-oz. bottle marked "Fowler's Solution of Arsenic—dose, 3 to 5 drops;" this bottle contained three drachms and twenty minims of Fowler's Solution. I may here mention that it was ascertained from the chemist who supplied this bottle to Mr. Cross that it had been got a considerable time before his wife's death; that the bottle was only half filled in order that it might be the more convenient for dropping. Thus it would appear that only forty minims had been taken from the bottle—*i.e.*, a quantity equivalent to one-third of a grain of arsenious acid. These facts might have been produced in evidence if it was thought advisable to do so. Amongst the remaining articles examined was a bottle of Brown's Chlorodyne, about two-thirds full, and a broken minim measure, which was taken from the mantel-piece in Mrs. Cross's bed-room, which contained a trace of chlorodyne. It is unnecessary to refer to the contents of the various other bottles.

Evidence was given by Mr. Kiloh (chemist) that Mr. Cross purchased on September 2nd, 1886, 1 lb. of white arsenic, for the purpose of sheep-dipping. The witness was unable to say whether on this occasion, owing to the purchaser being a surgeon, the arsenic had or had not been mixed with soot or indigo.

Sergeant Higgins deposed that he was in charge of the prisoner on the first day of the magisterial inquiry, which took place on August 1st, and that in a conversation which took place between the prisoner and his sister he overheard the following, of which he made a note at the time:—Mr. Cross asked his sister, "Did you see the two little bottles about the length of my finger?" She answered, "Yes, yes; I destroyed them with the other things." He added, "With the white powder in them?" And she again said, "Yes, yes; I destroyed them with the other things."

The Case for the Crown.—This, it may be briefly stated, was that Mr. Cross had acquired a passion for his governess, and had actually, on more than one occasion, occupied the same bed-room with her in a hotel in Dublin; that, in consequence, he had become more than indifferent to his wife; that he resolved to get rid of her, and did so by slowly poisoning her with arsenic; and at the end, owing to impatience, he hastened her death either by the administration of strychnin or by violent means. It was also shown that he prepared her friends beforehand for the probability of hearing of her sudden death; that he gave a false account of her symptoms, a false certificate of death, with variable accounts

to her relatives and others as to the precise cause—at one time saying it was stoppage of the heart, and at another angina pectoris, having previously certified and stated it was typhoid fever. He hurried on the funeral, had communication with Miss Skinner about the time of his wife's death, got married to this lady shortly after, and would have kept the marriage secret but for the letter received by a neighbour.

Now it appears to me that there were various important points in the case which counsel for the Crown failed to bring forward; some of these I shall now briefly mention:—1. No attempt was made to show that all the facts, as detailed in evidence, were consistent with the administration of strychnin at the close of the tragedy; that such might have been done I shall presently endeavour to prove. 2. No comment was made, which to me seems most remarkable, on the absence of arsenic (with the exception of the small quantity of Fowler's Solution previously referred to) from the collection of articles taken from Mr. Cross's surgery. 3. Although I stated in my examination that the administration of a narcotic would have the effect of diminishing or preventing the painful symptoms which arsenic might cause, and there was distinct proof of the frequent recurrence of drowsiness and of the administration of chlorodyne, counsel failed to catch the idea that the latter was evidently administered with this express object. Some additional points will be referred to when dealing with the subject of the defence.

The Defence.—This was of a singularly weak nature, and might be said to consist altogether of two very eloquent speeches by counsel, which contained a good deal of matter foreign to the evidence, a large number of misrepresentations, many of them, no doubt, unintentional, and, as might naturally be expected, in the absence of anything of a really tangible nature, a good deal of abuse of some of the Crown witnesses—myself, of course, included. The only witness produced was Miss Cross, sister to the accused, who swore that she always considered the late Mrs. Cross a delicate woman, with a delicate stomach, subject to attacks of the heart; that she, the witness, frequently attended on Mrs. Cross during her late illness, and often brought her drinks and other nourishment; that on the night of Mrs. Cross's death she went to bed about half-past ten; that during the night she was roused by a little scream from Mrs. Cross's room; this was followed by two or three little screams, after which she heard her brother go down

stairs; during his absence she heard another scream or cry; she heard him come up again and re-enter the room; almost immediately after he came to her own room; she rose at once and went to the other room; she went to the side of the bed, and saw Mrs. Cross lying quite still, her head on one side, and her hand as if it had been on her heart; she thought her dead, but brought the hot-water tin from her own bed and put it to her hands, with the hope it would restore her, but without effect; after that she went and lay on her bed, and rose in the morning about seven; the dead body of Mrs. Cross was not rigid; death took place on Thursday, and on the Monday or Tuesday following witness was in Mrs. Cross's bedroom with her brother; close to Mrs. Cross's bed was a private press or wardrobe, the keys of which were always kept by deceased; she examined the contents of this press that day, and found in it, in addition to clothes or other articles, three or four bottles, one of which contained rouge, and another some white powder; this she showed to her brother, and then threw its contents amongst some other rubbish in the grate; she put the bottle on the chimney-piece, and, subsequently, sent it downstairs to be washed; several bottles were taken down to be washed after Mr. Cross came home. In cross-examination the witness admitted that the conduct of her brother towards his late wife was often hasty, and he used sometimes curse her. During the two and a half years witness was in the house she could remember only one day on which, previous to her fatal illness, the deceased was confined to bed—this was for a gastric attack—the date of which was uncertain; she did not think her sister-in-law was in danger; her brother never told her so, but she often heard him say she might pass away from her heart; he had told her that deceased had a low fever, of the typhoid type; she saw her brother on various occasions give Mrs. Cross, during her illness, chlorodyne, sal-volatile, or ether; she saw applications of mustard poultices being made on different occasions to the pit of the stomach, to relieve the pain from which her sister-in-law suffered when she vomited. The witness did not know where her brother was when she left the dead woman's room and went to bed; she attached no importance to the destruction of the white powder which the bottle contained; it was not labelled; her brother said to destroy it; she never said there were two bottles with white powder. She further stated that at the conversation referred to by Sergeant Higgins Mr. Cross said, "Do you remember the two little bottles with

some white powder that were amongst that rubbish?" She said, "I do." And he then said, "Is it possible that could have been arsenic?" She believed she said that she destroyed them. On the night Mr. Cross came into her room he had not taken off his clothes at all.

The line of defence adopted by prisoner's counsel in his opening speech was, first of all, to show the improbability of the prisoner's committing the crime in the manner attributed to him, and denied the existence of a sufficient motive for the crime, as it was shown that the prisoner was able to gratify his passions during the life-time of his late wife. He asked the jury to disregard the evidence of the analyst, upon which the whole case rested, on the grounds that he had never performed a *post-mortem* examination previously on a person killed from arsenic, and had never before analysed human viscera for arsenic. He also endeavoured to show that strychnin could not have been employed, as the evidence went to prove that the body of Mrs. Cross was not in a bent and rigid condition at the time of death or some five or six hours after.

One of the prisoner's counsel, in his reply to the jury, endeavoured to make them believe that the quantity of strychnin said to have been discovered ($\frac{1}{100}$ part of a grain) was so minute that it was beyond human comprehension that anyone could discover it, because it was only the $\frac{1}{43750}$ part of an ounce. This gentleman also likened the liver to a sponge, which was only capable of sucking up a certain amount of any substance, and, therefore, it could not possibly contain such an amount as three grains of arsenic; and, strange to say, the learned judge in his charge seized upon this as being an excellent illustration. This goes to show the utter absurdity of anyone trying to deal with scientific matters on which they are wholly ignorant. Scarcely anything could be more far-fetched than the idea here conveyed; and, even if the liver did act in the manner ascribed to it, it is a strange sponge which, while itself weighing 21,875 grains, could absorb only 3 grains, *i.e.*, $\frac{1}{7292}$ part of its own weight.

It is worthy of remark that no medical expert was produced for the defence, although the services of Dr. Rawdon Macnamara were retained, and he was actually present in court during the entire trial. I think it will be generally admitted that, in the fact of their not doing so, prisoner's counsel displayed a wise discretion. Undoubtedly his production would have had the effect of strengthening the case for the Crown, as in cross-examination he would

have been bound to admit several points of great importance, some of which were not elicited from myself when under examination. Amongst these I may mention the following:—1st. That the symptoms described were those of arsenical poisoning. 2nd. That the *post-mortem* appearances were corroborative of the same. 3rd. That the tests and methods employed by me were quite correct. 4th. That the tubes produced in court (if submitted to his examination) contained crystals of arsenious acid. 5th. That it mattered not, so far as the duties of an analyst were concerned, whether he had ever even seen the interior of a human body; and that no distinction was observed in separating poisons from the organs of the lower animals and those of the human subject. 6th. That the quantity of strychnin discovered was more than sufficient to prove its nature, and that by the careful employment of the colour-test the presence of even $\frac{1}{100000}$ part of a grain could be satisfactorily demonstrated. 7th. That the crystals of arsenic are so highly characteristic as to be capable of recognition under the microscope when only $\frac{1}{10000}$ part of an inch in diameter, and may be obtained when only $\frac{1}{50000}$ part of a grain is employed in the test. 8th. That it mattered not in the least, so far as the prisoner was concerned, how the poison discovered was distributed throughout the various organs; and that to a medical man the fact of even a single grain being present in the entire body would be quite sufficient to prove that a poisonous dose had been administered or taken.

I have already stated that it might have been shown by the Crown that the conditions present immediately after death were not inconsistent with the termination of life by strychnin poisoning. I shall now proceed to prove that such was the case:—It is well known that when death takes place from strychnin, as a rule, the body becomes quickly rigid, the rigidity usually persisting for a considerable time; when the person dies during a convulsion, and rigidity immediately supervenes, the distorted condition of the body and limbs may persist after death; this, however, is the exception and not the invariable rule, as counsel ingeniously represented. In Taylor's "Medical Jurisprudence," Third Edition, edited by Dr. Stephenson (Vol. I., p. 432), the following quotation occurs:—"The body of a person poisoned by strychnine may, therefore, be found in a non-rigid state within the ordinary period after death." And again:—"In other instances of strychnin poisoning no particular degree of rigidity has been found at any

period after death." It is also a well-known medical fact that in the bodies of those who died in an exhausted condition, either from disease or otherwise, rigor mortis supervenes very rapidly, and is of transient duration. Now, I think it will be readily conceded that the late Mrs. Cross, at the time of her death, owing to repeated vomiting and diarrhœa, must have had her nervo-muscular system reduced to a degree of very great exhaustion. We may, therefore, conclude that, whether a dose of strychnin had or had not been employed to terminate her existence, in either case *post-mortem* rigidity would have quickly set in, and disappeared in an evanescent manner; so that it is almost certain no trace of rigidity would have remained after the period which had elapsed between the occurrence of her death and the time at which she was first seen either by Miss Jefferson or the servants on the following morning.

When under examination I was asked if I could account for the screams which were heard by Miss Cross and the servants; this I declined to do, as more than one possible cause suggested itself to my mind. The popular opinion which I have heard expressed is that they were due to the employment of violence. With this I do not agree; as I believe that if violence had been employed, precautions would have been taken to prevent their occurrence. No explanation would account for them more satisfactorily than the supposition that they were produced by the painful convulsions due to strychnin poisoning. I must, however, here point out that convulsions of a painful character are very frequently present towards the close of cases of slow arsenical poisoning. If, however, we adopt this latter suggestion, we must account for the presence of strychnin in the body of the deceased. This, I think, may be readily done, as it is perfectly evident that from the loose manner in which packets of this substance were left knocking about Mr. Cross's surgery, it is not difficult to conceive that a small quantity might have become accidentally mixed with a packet of arsenic. I do not, however, believe that this was the way in which it came to be present.

When subjecting me to cross-examination, prisoner's counsel very properly sought to show that I might have been led into confounding a ptomaïn with the alkaloid strychnin. This possible source of error, I may say, received my most careful consideration at the time of my analysis, and led me to adopt the utmost precautions, so as to avoid the possibility of such a mistake. Counsel quoted

the following passage from Blyth (*op. cit.*, p. 466) in support of his case:—"Nevertheless the existence of ptomaines may be conceded, and also the fact that some of their reactions and properties resemble such alkaloids as strychnine, morphine, &c., but such differences for the most part exist that a careful and experienced toxicologist would not be likely to form erroneous conclusions," and of course he would not admit that the present writer could be regarded as such. Referring to the colour-test for strychnin, Dr. Blyth (*op. cit.*, p. 322) says:—"These characters—viz., alkalinity, bitterness, and the property of precipitation by potassic chromate in a definite crystalline form, the crystals giving the colours detailed—belong to no other substance known save strychnine, and for all purposes sufficiently identify the alkaloid." The existence of all the characters here set forth, as already mentioned, was carefully ascertained in the present instance.

It may be interesting to my hearers to know that the presence of a ptomaïn was actually discovered, which had a pungent odour and taste somewhat resembling veratrin, and which, on the addition of sulphuric acid, displayed a crimson colour. It is almost needless to remark that this could not have been confounded with strychnin, which gives no coloration with sulphuric acid alone. I made no reference to the discovery of this substance in my evidence, as I thought it might only lead to confusion and serve no useful purpose.

I shall now briefly consider from a medical point of view the possible lines of defence which might have been adopted in this case:—1. That Mrs. Cross did not die of poisoning at all, but succumbed to some heart affection or other natural cause. 2. That she did die of arsenical poisoning, and that this might have occurred through self-administration, either by accident or design. 3. That she might have been poisoned accidentally, or otherwise, by others beside the prisoner.

Now it is difficult to conceive how any sensible person, in the face of the evidence which I have detailed—namely, the presence of well-marked symptoms of arsenical poisoning during life, the distinct *post-mortem* appearances corresponding thereto, and finally the presence of arsenic in poisonous quantity in the body—could adopt the first of these defences; yet this has been the theory adopted by some of those who sought to prove the innocence of Mr. Cross since his conviction. The possibility of accidental poisoning is clearly disproved by the history of the symptoms detailed by

Miss Jefferson. It may no doubt be said that a single poisonous dose of arsenic has been known to give rise to a prolonged and fatal illness, with distinct intervals of remission in the symptoms. If this view had been put forward it might be readily met by the assertion, that if only one dose had been swallowed at the commencement of the illness not a trace of the poison would have been present in the system at the time of death.

If it was suggested that others beside the prisoner administered the poison with criminal intent, in the absence of motive, it would have to be admitted that such must have occurred only at his instigation, in which case he would have been equally guilty.

It seems to me that the only line of defence which might have met with a reasonable prospect of success would have been to boldly admit the fact that the poisoning actually took place through self-administration, and that the prisoner was really under the impression that his wife was suffering from typhoid fever or some other gastro-intestinal affection, and that the chlorodyne was administered with the best intentions to allay the symptoms; and even it could have been shown that small doses of strychnin might naturally be employed for a similar purpose.

In Quain's "Dictionary of Medicine" (Vol. II., p. 1685), a bilious form of typhoid fever is described as follows, which closely resembles arsenical poisoning:—"The characteristic feature is frequent, sometimes almost incessant, vomiting of liquid containing bile, both after food and when no food has been taken; severe headache often persists throughout the attack; the temperature does not, as a rule rise high, and it fluctuates much; the face is pale and anxious; the pulse is frequent and very weak; the tongue is usually coated. and may be white or yellow." It might (if thought advisable) have been shown that arsenic is sometimes administered in typhoid fever to restrain diarrhœa, and is also frequently given to prevent the paroxysms of angina pectoris; and that strychnin is also sometimes given for the latter affection as well as to check vomiting (see Lauder Brunton—"Pharmacology and Therapeutics"—Index of Diseases and Remedies). I need scarcely point out that no such case as I have here made out was produced for the defence; had such been done, I do not think it likely that it would have proved successful. I shall endeavour to point out how the various points might have been met by the prosecution. With reference to the variety of typhoid alluded to it must be acknowledged that it is of such rare occurrence that

few medical men have met with a case of the kind; and that if present it would be more likely to be mistaken for a case of irritant poisoning than for the opposite to occur. Now as regards the self-administration, I have already pointed out that owing to the fact that repeated doses must have been administered in order to produce the symptoms present in this case, the possibility of accidental administration on such a number of occasions cannot be admitted. If it was put forward that Mrs. Cross deliberately took poisonous doses of arsenic on repeated occasions, with the object of committing suicide, we should have to believe that she subjected herself to a slow and painful form of lingering torture such as cannot be found recorded in toxicological literature. On the other hand it has been suggested that this lady was in the habit of taking arsenic as a cosmetic, or that she was an arsenic-eater, such as may be found amongst the inhabitants of Styria. If she employed it at all for the former purpose it is nearly certain it would have been in the form of solution and not in the solid state; this would also have been the form of administration most likely to have been chosen if administered for medicinal purposes. If the latter theory be chosen, it will have to be admitted that arsenic-eating, after the manner of the Styrians, is quite unknown in this country; yet, even if such a practice had been acquired, can anyone believe that a person eating arsenic to benefit their health would continue to employ it in poisonous doses when it produced such violent symptoms? We are, therefore, forced to the conclusion that the poison must have been administered by some other hand. Now, much fault has been found with the judge who tried this case for directing the jury that if they were satisfied that the deceased died from poisoning they were bound to find the prisoner guilty. While I think he might readily have allowed the jury a little more latitude for the exercise of their own judgment, I utterly fail to see how either he or they, with the evidence before them, could arrive at any other conclusion. It will be observed that, so far as my evidence is concerned, it merely went to prove the cause of death, and in no way implicated the prisoner. A critical examination of the speech delivered by the prisoner, previous to the passing of sentence, shows it to be wholly inconsistent. If some of the statements made by him were true, they could have been proved in evidence. It is interesting to note that his account of the destruction of the bottles does not correspond with that of his sister, nor hers with that of the police sergeant who overheard the conversation and

wrote it down; and, strangest of all, he admits, what Miss Cross did not, that there was a patent medicine in the wardrobe which contained strychnin.

It has been remarked that the prisoner, considering that he was a medical man, committed this crime in a very clumsy manner. I do not altogether agree with this. He selected a poison which was without *odour*, *taste*, or *colour*—therefore most easy of administration; he exhibited it in repeated doses, so as to produce a prolonged illness, and gave chlorodyne to mask the painful symptoms; he prepared her relatives and friends for her approaching death, gave a false account of her symptoms, and, once she was buried, who would have heard of the "Cross Poisoning Case" if the hasty marriage had not occurred, or had remained a secret for six months? On calmly reviewing the entire features of the case in the most unprejudiced and dispassionate manner, which I have done on repeated occasions, I cannot for one moment conceive how any sane person can bring themselves to believe, even if they say so to others, that Philip Henry Eustace Cross was innocent of the crime of which he was found guilty and for which he was deservedly executed.

After the conviction of Mr. Cross a powerful effort was made by a considerable number of individuals to obtain for him either a reprieve or an alteration of sentence. Of those who took part in this matter there were some who were naturally actuated by interested motives; there were others who were influenced by purely benevolent feelings, and deserve the highest commendation; many did so owing to their entire disapproval of capital punishment in general; some few existed who either asserted their belief in the prisoner's innocence or thought there was some slight doubt of his guilt; while, I believe, it must be generally acknowledged that the greater number attached their signatures to a memorial simply because they were asked to do so.

Numerous letters were written to the local press, a few of which contained some shallow arguments in favour of the prisoner's innocence. Any of these that were worthy of consideration have been already dealt with. Notwithstanding that some of these letters contained gross misrepresentations (many of them, no doubt, unintentional) and numerous statements of a nature calculated to reflect on my professional reputation, up to the present I have treated them (as, I trust, I could afford to do) with silent contempt, as I felt that any refutation of them by me, at a time when the memorial on behalf of the convict was under consideration,

would be certainly calculated to diminish its prospect of success, and would, in addition, have the effect of making me appear to act the part of Crown advocate—a position which throughout the entire case I most carefully refrained from assuming.

One correspondent (although a medical man) having pointed out that arsenic was an occasional impurity of chloroform, and that the latter entered into the composition of chlorodyne, asked the (apparently to him somewhat profound) question—"Did the analyst test the chlorodyne for arsenic?" It will probably gratify this gentleman to know that the analyst did do so with a negative result, not, however, with the object he supposes of detecting the presence of this substance as an impurity, but of ascertaining whether the chlorodyne had been employed as a medium for the administration of the poison. I scarcely think it possible that it would have occurred to any medical man, save the writer of the letter referred to, that the presence of *dissolved arsenic in minute quantity* in the chlorodyne administered to Mrs. Cross would have accounted for the presence of arsenious acid in *solid form and poisonous quantity* in her stomach and intestines.

Another writer (a clerical gentleman) makes the audacious statement—"I am in a position to know that this lady (meaning Mrs. Cross) has been for the past six or seven years, and more, continually suffering from affections of the heart, the lungs, and the stomach." The question will naturally be asked—How was he in a position to know? Listen to his own answer. He says:—"I can swear that I have heard this said of her over and over again, years ago, by one who knew her intimately." Evidently, we may conclude that the intimate acquaintance was not a medical man. Could anything be more utterly absurd? Further on the writer says:—"There was the sworn evidence that three grains of arsenic were found in the liver—three times as much as any human liver could possibly absorb or as the whole faculty had ever discovered in a human body since the world began!" The untruth of the first portion of this statement has been already shown; as regards the latter portion of it, the writer of the letter referred to will probably blush when he hears that as much as two ounces, or over 870 grains, has been found in the body of a person who died from arsenical poisoning. Again, he says:—"The analyst did not know the fact that the human liver could not possibly absorb more than one grain of arsenic." Unfortunately, the analyst still remains ignorant of this "fact" (?). He also mentions that the

analyst said that the strychnin was taken or administered in order to hasten death. This statement is a pure invention of a fertile imagination. I disregard any further remarks of this gentleman as being unworthy of serious attention, nor shall I allude to some of the language employed by him; but I trust when he is afforded an opportunity of reading these few lines it will have the effect of deterring him from rushing into print on a subject on which, from his own showing, not to speak of other considerations, he must be profoundly ignorant.

ART. XII.—*Surgery of the Thyroid Gland.*[a] By GEORGE FOY, F.R.C.S.; Surgeon to the Whitworth Hospital, Drumcondra.

IN reading the history of operations on the thyroid, nothing is more apparent than that surgeons, separated by long intervals of time, adopt the same precautions to minimise the dangers of the operations. Thus we find Mr. P. W. Watson (*Ed. Med. Journal*, Sept., 1873) adopting the same method as Desault did on a woman patient in the Hôtel Dieu, 20th March, 1791—namely, tying the superior and inferior thyroid arteries, and dividing the isthmus of the gland, as the preliminary steps of the operation of excision.

From the great vascularity of the thyroid, surgeons were anxious to substitute operations other than cutting ones for the treatment of bronchocele. And since Professor Victor Horsley's Brown lectures in December, 1884, telling that ablation of the thyroid caused atrophic changes in the central nervous system, and an increase in the general connective tissue, with a mucoid degeneration of the ground substance, the search for a remedy that will do away with the necessity for using the knife is not slackened.

It would be unprofitable to enumerate the many remedies that have been tried, and as we are yet a long way from the time when the knife can be laid aside, our search had better be for its more efficient use.

Delay in performing an operation when it has become necessary is criminal, and we cannot too strongly deprecate the habit of exhausting a long list of supposed remedies before an operation is advised.

An early operation for a tumour gives the surgeon the best possible chance of success, and his success means the patient's

[a] Read before the Surgical Section of the Royal Academy of Medicine in Ireland, on Friday, January 20, 1888.

recovery. The tumour is then at its smallest; has least attachments; degeneration is less likely than later on; the blood-vessels are smaller than they would be if the operation is deferred, and the surrounding tissues are in their normal condition and site. These grounds for an early operation are particularly good in the case of thyroid tumours, where the vascular growth is quick beyond proportion to the tumour growth.

In thyroid operations the older surgeons knew almost no risk, except bleeding, the excessive amount of which may, I think, be fairly ascribed to a paralysis of function of the vaso-motor nerves and an imperfect contraction and retraction of divided arteries—these latter conditions probably due to some alteration in the arterial coats.

Certainly in goître the amount of blood lost appears out of proportion to the size of the vessels cut.

It is true there was some dread of thyroid inflammation, and enlargement of the mediastinal glands; but the greatest risk was that of hæmorrhage. Abraham Colles, writing in 1811, says:—"That enlargement of the thyroid gland called goître we know to be but little affected by any medicines or external applications hitherto employed. This disease, though not of a painful nature, yet induces such deformity as to render the mind of the patient miserable. He sometimes implores the surgeon to undertake any operation however hazardous for his relief. But to such solicitations nothing should tempt you to yield, for you should recollect the large supplies of blood that this gland enjoys, even in its healthy state, and the free communication between its arteries."

Even John Bell disapproved of operations on the gland on this account.

On the Continent the same dread did not exist, though Gooch, who followed Desault's method, lost his first patient by hæmorrhage, and his second was saved only by the continuous pressure for eight days of the hands of relays of assistants. Hedanus, of Dresden, who successfully extirpated six thyroids, found bleeding the principal difficulty, and one of his cases had secondary bleeding on the eighth day, with a recurrence of it on the sixteenth. Klein (in 1820) lost a patient, aged eleven years, from the same cause. He actually died on the operating table. The danger from bleeding is still very great. Sir William MacCormac has recently had to apply 100 ligatures when removing a tumour of the thyroid. But excessive bleeding is not the sole danger. Billroth writes of a case in which

he removed a tumour the size of a hen's egg immovably connected with the trachea:—"I extirpated the tumour, and found the operation one of the most difficult I ever performed. There was great difficulty in separating the tumour from the trachea and the deeper parts; the hæmorrhage was very severe, and attacks of suffocation occurred, and she seemed several times during the operation on the point of death from asphyxia."

Cystic tumours of the gland are difficult to diagnosticate. Syme is credited with mistaking one for a carotid aneurysm. He tells of a lady who "had a lobe of the thyroid enlarged into a round tumour with such a narrow neck as to appear altogether insulated;" but in the removal of which such severe bleeding occurred that he had to transfix the base with pins according to Liston's method, and ligature the base as recommended by Hedanus.

Cysts sometimes rapidly increase in size. A case is reported in the *British Medical Journal* of July 5th, 1884, in which, within a few minutes, a cyst suddenly increased in size from that of a walnut to that of an orange. The patient became senseless and livid. Owing to the position and size of the tumour tracheotomy could not be performed, and the patient died. The autopsy showed that the sudden enlargement was due to effusion of blood. In Labbé's case the cyst suppurated, occasioning much pain and annoyance to the patient.

Although myxœdema and cerebral troubles occur after excision of the gland, yet they are not reported as following the removal of a tumour.

Cysts are amongst the most common enlargement of the gland, and it is for them especially that so many minor operations are recommended, and such a list of internal remedies and external applications produced, and very frequently valuable time is wasted in abortive attempts to effect a cure without recourse to the knife. Yet many conscientious practitioners, who have had occasion to try tapping, setons, and soforth, do not recommend them.

In the beginning of August, 1885, I examined a cystic tumour which certainly looked a suitable case for tapping or some such operation, and yet something caused me to decide for its excision. I like to see what I am doing, and I like to see what I am cutting.

The patient—a young married woman, the mother of three children—complained of a lump in the front of her throat. She first noticed it about twelve months previously, when it was about the size of a hazel-nut; latterly it has been growing very quickly

She complains of dyspnœa and dysphagia, and going upstairs distresses her.

On examination an oval tumour was seen situated in the right lobe of the thyroid gland. It moved vertically with the gland, and had a slight lateral movement. The skin over the tumour was unaffected, and freely movable. Having plainly placed all the risks of an operation before the patient, her husband and mother, and receiving their full approval to its being done, I, on the 26th of August, commenced the operation. The patient being anæsthetised by Dr. Cosgrave, I was further assisted by Drs. Wharton, Oulton, Wynne, and Wm. Montgomery.

The primary incision extended from the hyoid bone to the sternum, and the thyroid was quickly exposed—bleeding vessels being secured with catch-forceps as the operation proceeded. Liberated from pressure, the tumour bulged into the wound, and appeared as an opaque, oval mass, larger than a hen-egg, enclosed in a thin, fibrous capsule. So far everything was most favourable—the patient was breathing easily, and the pulse was regular. A slight incision in the capsule exposed the tumour, and breaking down a few adhesions with my finger, I lifted the tumour with my hand from its bed. Scarcely had it been removed when a copious rush of blood followed. Almost immediately six vessels were caught with clip forceps, and a bunch of vessels, which were spouting blood, were caught in one mass by a broad pile forceps—yet no appreciable check was given to the flow of blood. So freely was the blood coming that some of those present imagined that one of the principal vessels of the neck was injured. Believing that any further attempt to seize the bleeding vessels one by one would lose valuable time and seriously endanger the patient's life, I, with the approbation of those present, plugged the wound with new sponges, and to retain them in position and keep up continuous pressure, I passed four long and strong entomological pins across the wound from side to side, and lapped strong whipcord in figure-of-eight coils from pin to pin in a similar way to that in which hare-lip pins are secured in place.

On the second day the forceps were removed, and three days afterwards the sponges.

Whilst dressing the wound I counted thirty-eight vessels, which were evidently prevented from retracting by the fibrous envelope; they were principally branches of the superior thyroid, and entered the tumour on its posterior surface.

Porter recommends opening the capsule, as by so doing you are less liable to hæmorrhage; but from the case narrated, I think the capsule, when retained, holds the small arteries in position, and prevents retraction.

The wound was dressed by wiping with fresh cotton wool, and afterwards dusting with iodoform; this latter had, however, to be discontinued, owing to its purging and griping the patient. One month after the operation the lady returned to her home in one of the midland counties in England.

Internal medication and external applications in the case narrated, had they been tried, would have wasted valuable time without any reasonable good results.

Tapping would have evacuated the contents of the tumour, but it is highly probable that it would have been followed by an uncontrollable hæmorrhage. And with the knowledge of the tumour acquired from the operation, I still am of opinion that the best course for the patient was excision, and the successful issue of the operation in great part confirms the decision.

MONTREAL ROYAL VICTORIA HOSPITAL.

A Board of Governors, with the Honourable J. J. C. Abbott, Q.C., as President, has been organised under a charter obtained during the last session of the Dominion Parliament of Canada for the constitution of the Royal Victoria Hospital about to be erected for the City of Montreal through the munificence of two distinguished and patriotic citizens, Sir George Stephen, Bart., President and Director of the Canadian Pacific Railway, and Sir Donald Smith, K.C.M.G., M.P., also a Director of the Canadian Pacific Railway and of the Hudson Bay Company. These gentlemen have given one million dollars for the purposes of the foundation of the institution, and the Corporation of the city has very generously supplemented the gift by granting as a site for the new building a lease in perpetuity of a plot of land about twelve acres in extent, situated near to the north-east angle of Mount Royal Park, at an elevation of about 300 feet above the St. Lawrence River, towards which the city gradually slopes. It is proposed that the establishment shall accommodate about 300 patients, and that, in addition to the ordinary requirements of a hospital of that extent, there shall be a training school for nurses, a medical school, and an out-patients' department. Mr. H. Saxon Snell, F.R.I.B.A., of London, has been requested by the Board of Governors to prepare a design and direct the construction of the building.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

RECENT PERIODICALS.

Archives Roumaines de Médicine et de Chirurgie. Première Année. No. 2. Septembre, 1887. Paris: Ancienne Librairie Germer. Baillière et Cie. FELIX ALCAN, Editeur. 108 Boulevard Saint Germain.

AMONGST the least known of the European languages is the Roumanian, which is spoken by about eight millions of people. Nevertheless, it is sadly deficient in a literature, and although used as the vulgar tongue in Bulgaria, Servia, Transylvania, Hungary, Bessarabia, and Bukorina, nothing possessing any literary merit has appeared in it, nor in its allied dialect, the Macedo-Roumani, which is used in Macedonia, Thessaly, and Albania.

The language owes its origin to the inrush of the Goths, Huns, Slavs, and Bulgars, who successively laid waste the Danube valley, and corrupted the rustic Latin spoken by the Roman provincials between Pontus and Adria.

It, however, possesses many points of philological interest, and to the student of languages offers little difficulty; and we now find that not to a Roumanian, but to the energy of a French publishing firm, Roumania is indebted for her first medical journal, which has already reached its second number.

As might be expected from its source, the journal is published in the French language, and is most creditably issued both as regards type and paper.

M. Georges Assaky edits the *Archives*, and in the present number Dr. J. Felisc, of Bucharest, completes his article on the necessity of isolation in cases of infectious diseases, and the benefit to the community of special hospitals for them.

It is, however, rather strange to find the next article in the journal to be from New Orleans, La., U.S.A., especially when the author—Dr. Just Touatre—was, so far back as 1884, in

possession of the knowledge that he now gives to his brethren through a Roumanian journal. We should naturally have looked for the article in one of the many excellent journals of the States, especially as they offered to the author his choice of either English, Spanish, French, or German as a medium. But we must deal with facts as we find them, and Dr. Touatre's article on "The Cure of Hepatic Colic by the Evacuation of Biliary Calculi" goes to prove that in olive oil we have a safe, reliable, and not very unpleasant remedy for gall-stones; and this on the best authority, that of the author himself, who in June, 1884, had personal experience both of the disease and of its cure.

He commenced his treatment by taking fifteen centigrammes of blue pill at night, at seven on the following morning he drank six fluid ounces of olive oil, and fifteen minutes after he took another six-ounce dose of the oil, after which he lay on his right side until nine, when he passed a full motion in which no gall-stones were found. Before seven in the evening, however, he had six free and painless motions, in which were found no less than seventy-seven gall-stones, varying in size from a pea to that of an olive, the majority being about the size of a haricot bean.

M. Kjrive contributes an article on amputation of the penis, in which he lays much stress on the benefit of suturing the mucous and cutaneous surfaces. The rest of the journal is occupied with the proceedings of Parisian medical societies and selected cases.

The enterprise seems likely to be a success, and we wish it every prosperity. A country possessing two Universities, with an area almost equal to that of England, and a population nearly the same as that of Ireland, should support at least one medical journal.

The New Zealand Medical Journal. No. 1. Vol. I. September, 1887. Published Quarterly. Dunedin: T. Wilkie & Co., Prince's-street.

We have received the first number of this journal, which is being edited by Dr. D. Colquhoun. The work done, both in medicine and surgery, necessitated a medical periodical if a record was to be kept of the many interesting cases which come to our brethren in this young and flourishing colony, which in area is almost the equal of Great Britain and Ireland, though its population is returned (March, 1886) as only 578,482, and of these 400 are practising medicine.

The journal is to be published quarterly, and the present copy

reflects great credit on all concerned in its production. It is issued from Dunedin, the commercial capital of the colony, and the site of the Otago University. The illustrations are well done, though not quite as well finished as they would be in some of the older European capitals, still they tell that energy and enterprise, and faithful workmanship, are amongst the elements that have produced the success of this great colony. And just a few words on the contents, for they are worthy of enumeration, and an editor that has such material to set before his subscribers may feel assured that his venture will be a success.

Of the sixteen original contributions we may draw attention to the following as especially worthy of notice—"Nephrectomy," by Mr. Davis, for tuberculous kidney in a man aged thirty-eight. The operation was performed on the 26th of August, and the patient was able to walk in the hospital grounds on the 30th of September following. No bad symptom appeared after the operation, and the patient increased in weight from 8 stone to 10 stone 8 lbs.

Removal of the uterus for a concentric "Interstitial Uterine Fibromyoma," weighing 18¼ lbs., is recorded by Mr. Maunsell, of Dunedin. The author lays much stress on his extra-peritoneal method of treating the uterine stump. The case is illustrated by seven woodcuts. The operation was a success, and from its magnitude and the difficulties encountered, reflects credit, not only on colonial surgery, but on the art itself.

Mr. Maunsell also records a very successful case of radical cure of femoral hernia by a new operation, which, so far, has produced good results, and in its execution is unattended with danger. The steps of the operation are as follows:—Having made an incision in the linea alba immediately over the pubes, the operator passes his finger down to the femoral ring, and on this as a guide he passes a strong, curved, eye-pointed needle, pushing it through the skin over the saphenous opening, and through the fascia of the pectineus, and finally, through the border of Gimbernaut's ligament, where it comes in contact with the operator's finger. The needle is now protruded through the abdominal opening, and threaded with strong wire, after which it is withdrawn and the wire removed, when a second insertion parallel to the first is made until Gimbernaut's ligament is reached, then the needle is passed over Poupart's ligament, and once more protruded at the pubic incision to be threaded with the other extremity of the wire, and

to be withdrawn as before, until, escaping through the skin of the thigh, the wire is removed from the needle and the two free ends are tied firmly over a small pad. The operation was performed on the 25th of March, and on the 20th of July following the woman was engaged in her ordinary occupation without any inconvenience.

Mr. Batchelor's case of "Abdominal Section for Extra-Uterine Fœtation" is worthy of being transcribed did space allow. But we think, from the excerpts we have given, that our readers will concur with us in stating that this first attempt at medical journalism in New Zealand is highly creditable to all concerned, and full of promise for the future.

The Manitoba, Northwest, and British Columbia Lancet. No. 1. Vol. I. Winnepeg, Manitoba, June, 1887. Published Monthly.

THE little paper before us tells of a revolution great and beneficient—one of those victories of Peace that bless both victor and vanquished. To realise something of the magnitude of the change it is necessary to in part recall the past, and permit the early actors in this great drama to detail the part they each played in carrying out the good work.

To the Venetian, Sebastian Cabot, who in 1497 sailed from Bristol to Cape Breton, we are really indebted for the discovery of the great Dominion of Canada, though his discoveries excited little interest in England. It was not until 1535, when Jacques Cartier sailed up the St. Lawrence, that Europeans came in contact with the tribe of Algonquin Indians which occupies the fertile plains to the north and south of the great lakes, and the sources of the Mississippi, Missouri, Ohio, and Columbian rivers, and claimed the land from the Atlantic to the Pacific oceans, alleging that Manitou, their Great Spirit, who, seated in the far north at the "turbid waters," Winnepeg, had given to them through a favourite medawin control from his home both east and west to the ocean. For Manitou revealed himself to men "in thoughts from visions of the night, when deep sleep falleth on men."

It is true that a Norse legend tells of the discovery of the country by Bjarni, who, after feasts and sacrifices, started from his Scandinavian home to spend Yuletide by his father's hearth and with his father's friends. "The first toast drunk was Woden's, which was drunk for victory and the happy rule of the king; and after that Niord's toast and Itray's toast for good seasons and peace."

Herjulf, the father of Bjarni, having accompanied Erick the Red to Greenland whilst Bjarni was in Norway, Bjarni resolved to follow Herjulf, and with him spend the winter as was his wont. On his voyage thither wild storms drove him further south than usual, and after many days he found the vessel close by an elevated and wood-covered shore. This voyage was made probably in 986, and a few years later he again sighted the American coast, which, from being well-wooded, he called Mark-land. But it was not until 1763, when Canada was ceded by France, that the marvellous career of progress in the country commenced; and in 1871, when the Dominion was formed, Winnepeg had only 241 inhabitants, and in sixteen years, ending 1887, that has been increased to 30,000. Where in 1861 the Indian still invoked Manitou, the printing press is at work disseminating scientific knowledge; and where the medawin sought to stay sickness by offerings to the Great Spirit by the river of muddy water, the physician of to-day practises vaccination and lectures on bacteria! This wonderful progress may be fairly credited to the increased use of mechanical aids. Men in the past hardly realised the value of mechanical help. "For one hundred and fifty years prior to the middle of the eighteenth century the patents granted for mechanical inventions were at the average rate of eight yearly. From 1763 to 1852 the annual rate was two hundred and fifty. During the next eighteen years it was over two thousand. In 1877 it was three thousand two hundred."

Mechanical aid cast the iron girdle of a commercial track from the Atlantic to the Pacific; brought the surplus population of our cities to the fruitful land of the West, and brings within the reach of our artisans the riches of the prairie soil.

The *Manitoba Lancet* has a great future before it, and is a most creditable venture—one to which we wish every prosperity and a long career of usefulness and honour.

Transactions of the New York State Medical Association for the Year 1886. Vol. III. Edited for the Association by ALFRED LUDLOW CARROLL, M.D. Concord N.H. 1887. Pp. 601.

IT will be remembered by some of our readers that State interference with the old New York State Medical *Society*, leading to the compulsory admission of "irregular" practitioners, became intolerable to a large section of its members, ultimately producing

disruption and the founding of the Association on an independent and voluntary basis. The affairs of the Society were, by the conditions of its constitution, regulated by statute; and in relation to quacks and quackery it was found that the decisions of the courts of law were invariably inimical to the dignity of medicine and the purity of professional practice. In one instance, for example, "an itinerant quack, with his flaming advertisements, was reinstated, after an expensive trial, into full membership in the County Society." The only remedy for this state of things was secession, and it has been in this case successful. The Association flourishes; the number of its Fellows increasing annually. In 1884 there were 514; in 1885, 629; in 1886, 643. Nor are the successive volumes of "Transactions," of which the third is before us, a less satisfactory indication of healthy vitality. This one contains addresses on surgery, forensic medicine, and therapeutics; reports of discussions on three subjects—surgical, medical, and obstetrical—on shot-wounds of the intestines, pulmonary tuberculosis, and eclampsia; two pathological demonstrations; and twenty-one papers, with the remarks which followed them. It is adorned, moreover, with a portrait of the late Dr. Austin Flint, who died on the 13th of March, 1886.

One of the most suggestive papers read at the Meeting was devoted (by Dr. Frederick Hyde) to the questions—"Is Erysipelas ever a strictly local disease?" and, if it is not such, "What should be its rational treatment?" The author answers the former question in the negative; and, as to the latter, concludes that the "treatment should be directed to the removal of its cause—poisoned blood." He holds that external applications are harmful, leading to recession of the disease to internal textures. The paper deserves attention. In the discussion which followed it was stated that the internal use of the "muriated tincture of iron" in the treatment of erysipelas originated in Buffalo (N. Y.), and accidentally. Being prescribed for local application, the tincture was taken internally in large doses by mistake, and with such good results that its use spread, and it has obtained the character of a specific throughout the world.

The discussion on Pulmonary Tuberculosis—a subject ever interesting and ever fresh—occupies 52 pages of the volume. It was opened by the well-known Dr. Didama, who threw the subject into the form of ten questions, allotting two of these to each of five members, selected for their special knowledge. Dr. Didama's

own views are of sufficient importance to be stated at some length. He holds that "the unborn or newly-born child of a consumptive parent is entirely free from tuberculous disease, taint, or tendency;" that "the new-born babe of a consumptive mother, when instantly removed from unhealthy surroundings and influences, and shielded from bacillic infection, is likely to remain free from tuberculous disease;" that "the vast majority of those who die of consumption are born of parents who are entirely free from lung-disease;" and that, consequently, "consumption is acquired, not inherited; that the so-called phthisical taint or tendency is simply an impaired resisting power—a vincibility of cells—which may be inherited as well from non-consumptive parents as from consumptive ones, or may be acquired without inheritance; and that in the contest unceasingly waged between cells and destructive organisms, the vigorous cells may effectually resist while the vincible ones are overcome and destroyed." Further on, as to the relation of bacilli to consumption, he remarks:—

"In many varieties of lung-disease the micro-organisms are not the instigators nor principals; they may be accidental and innocent by-standers; they are more likely to be willing accessories after the fact, and then chief partners in the wickedness. But there is no absurdity, as some have claimed, in the statement that consumption may originate without the bacilli, and that tubercles may be a supervention and a rapidly aggravating one. More than this, it is not difficult to believe that in all parts of the world—especially in those where bacilli do not abound—pulmonary consumption may have its rise, progress and fatal termination, without the slightest assistance from the iniquitous parasites."

Dr. Bontecou has had the rare fortune to meet with three cases of fractured neck, and to *cure* the only one who would submit to his treatment, which consisted in extension by adhesive plaster, cord, pulley, and weight—a weight of "about" 15 lbs. or 20 lbs. The extension was maintained for a little more than a fortnight. The bladder was paralysed and respiration embarrassed; but in six months he was able to pay his doctor's bill by painting his doctor's house, and he continued to earn his living for twenty years. When he died, the fourth, fifth, sixth, and seventh cervical vertebræ were found to be fused together.

We must content ourselves with enumerating the questions treated in the discussion on Eclampsia, and recommending it to our obstetrical readers. They are:—1. Does eclampsia ever occur without renal complications; and what is the connection between

uræmia and the eclamptic attack? 2. Should labour be induced in case of the occurrence of eclampsia during pregnancy; and under what circumstances, in case of threatened eclampsia, should premature labour be induced as a prophylactic measure? 3. What are the most reliable therapeutic agents for the control of the convulsions of pregnancy, labour, and childbed; and should bleeding be employed in eclampsia? 4. In what proportions do the insane in public asylums owe their insanity to puerperal convulsions?

Intelligence in the Van; the Beginning of the Beginning, and the End of the End. By HORACE DOBELL, M.D., &c., &c.; Fellow of the Royal Medical and Chirurgical Society; Fellow of the Royal Meteorological Society; Consulting Physician to the Royal Albert Orphan Asylum, Bagshot; Consulting Physician, late Senior Physician, to the Royal Hospital for Diseases of the Chest, London. London: Wertheimer, Lea & Co. 1887. Pp. 20.

WE have some fear that among the "all rights reserved" to the author of this pamphlet many readers will be disposed to include the right of understanding its drift. A primordial force, which he calls "Potentia," preceded all mundane things, comprising "within itself the possibilities of every mode of lifeless force (including all the physical forces), and every mode of vital force, including a mind-mode and a soul-mode;" and it is assumed that "the scheme of the universe was—*through the medium of matter* to differentiate all the possible modes of Potentia, and step by step *to individualise the highest modes* so that—that which in 'the beginning of the beginning' was diffused through space, shall in 'the end of the end' people the realms of Eternity with *individual* souls" (p. 5). Dr. Dobell adopts Romanes' well-known definitions of reflex action, instinct, and intelligence, but maintains that the order of development of these powers should be reversed. "Intelligence must have come first. Our key-note, then, must be, 'Intelligence in the Van;'" and he describes the process by which an animal endowed with these powers might have been evolved from *Potentia;* and how ultimately a stage might be reached in which all the acts necessary to the animal's existence had become Instincts or Reflex Actions, "thus releasing mind for the control of the instincts and of such new acts as may be required by circumstances which do not recur in sufficiently often repeated identical groups to become habitual" (p. 13.) He then considers the "impassable bar" sepa-

rating Man from every other living being when the mind-mode of vital force assumed the soul-mode. We are conscious of having given a very bald and imperfect view of Dr. Dobell's pamphlet; but we have said enough to attract to it the notice of those interested in transcendental biology, and more capable of understanding and appreciating it than—we candidly confess it—our matter-of-fact selves.

A Handbook of Diseases of the Skin, with especial reference to Diagnosis and Treatment. By ROBERT LIVEING, A.M. & M.D., Cantab.; F.R.C.P., Lond.; Physician to the Department for Diseases of the Skin at the Middlesex Hospital; Lecturer on Dermatology to the Middlesex Hospital Medical School, &c. Fifth edition. Revised and enlarged. London: Longmans, Green & Co. 1887. 8vo. Pp. 451.

THIS excellent handbook has rapidly run through four editions, and no one who knows Dr. Liveing's clear and systematic method of imparting information will wonder that the work should have so quickly made its mark.

The fifth edition includes new articles on Erythema serpens, Spurious Erysipelas, Malignant Pustule, Mycosis fungoides, Colloid Disease of the Skin, Rhinoscleroma, Xerodermia maligna, or "Atrophia Cutis (General Atrophy of the Cutis)" of Sir Erasmus Wilson; Scrofuloderma, Paget's Disease, or the "Malignant Papillary Dermatitis" of Dr. George Thin; Ulcers, Leucoplacia, and Lymphangioma. There are also new sections on "Nomenclature," "Classification," and, last not least, "Medicinal Eruptions."

The Practitioner's Handbook of Treatment, or the Principles of Therapeutics. By J. MILNER FOTHERGILL, M.D.; Physician to the City of London Hospital for Diseases of the Chest; Late Assistant Physician to the West London Hospital; Hon. M.D. Rush, Ill.; Foreign Associate Fellow of the College of Physicians of Philadelphia. Third Edition, enlarged. London: Macmillan & Co. 1887. Pp. 667.

THIS book is in its third edition. The fact says much. We venture to add our opinion that it deserves the success which it has achieved. It is not one of those double-barrelled pot-boilers—meant to hit "right and left," the profession and the public—scribbled

hastily in slipshod English and strewn with unjustifiable notes of admiration, which sometimes, unfortunately, bear Dr. Fothergill's name. It is an excellent, practical, work on therapeutics, well arranged and clearly expressed, useful to the student and the young practitioner—perhaps even to the old. We do not know whether the printer is to blame for such little eccentricities as "*scybalæ*" and "*torcula Hierophili ;*" if not, he has done his part well. Two chapters have been added in this edition, "The Dietary in Acute Disease and Malassimilation," and on "The Management of Convalescence." These chapters exhibit in style some symptoms of relapse into Dr. Fothergill's other "manner," characterised by colloquialisms, parenthetic sentences, and typographical requests for admiration; but their matter is good, and they form a valuable addition to the work.

Transactions of the Association of American Physicians. Second Session. Held at Washington, D.C., June 2 and 3, 1887. Philadelphia: Printed for the Association. 1887.

The first meeting of this Association was held on the 17th and 18th of June, 1886, at Washington, D.C., at which meeting Dr. Francis Delafield was president, and nineteen original contributions were read, and were of such a character as to show that the Association really consisted of men possessing both the capacity and courage to deal with many of the more difficult problems of medical study.

After such a successful meeting the fact that the associates came in increased number the following year was quite natural, and after this successful meeting the American Physicians' Association may be said fairly to have started on its career. The past history of medical societies in Dublin is that there is both a time to be born and a time to die. A list of the many societies connected with medicine that passed through the pangs of birth and died, some in a mature old age and some in yet their infancy, would fill a goodly page; and our youngest born has hardly been honoured by the prefix "Royal" until it finds itself in a sea of trouble and in considerable risk from the "Ethics" dangers. But to our text. Our American brethren have a right to be proud of this their second volume of "Transactions," in which the more prominent questions that have during the year come before the profession are ably dealt with. If space permitted we would wish

to carefully examine some of the theories advanced and practices advocated, but we cannot do more than draw attention to a few of the seventeen papers that comprise the volume.

Dr. Seguin, of New York, contributes an article on "Localised Cerebral Lesions," in which he gives histories of three cases, in all of which the lesion was diagnosticated during life, and they tell with what close attention cerebral lesions are being studied in the States.

In the discussion Drs. Patman (Boston), Mills (Baltimore), and Rayman (Chicago) contributed very valuable comments. Indeed the discussion was marked by such a close adherence to the question before the meeting as to cause us to regret that such a laudable custom is so uncommon in our midst.

"Methods of Research in Medical Literature," by Dr. J. S. Billings, is a very valuable contribution to those who seek long-forgotten lore and devote some time to the study of the ancients. Twenty years ago in Dublin the late R. W. Smith expressed his regret at the neglect of the classics of the art of medicine, and feelingly spoke of the glibness of the youth of the day, who, having done little more than master the technicalities of the science for their examination, assumed airs of superiority over even those who "still rule us from their urns." In Dr. Billings, R. W. Smith would have no fault to find; he not only has sounded all the difficulties that surround the reader's path, but has, with much trouble, contended successfully with them. "Attempts to learn what has been done, or said, or thought by our predecessors are due to widely different needs, and may be pursued by widely different methods," viz.:—(1) To gather and compare the records of all reported cases of particular forms of abnormality, disease, or injury. (2) To obtain statistical data with regard to the circumstances affecting the prevalence of a certain disease. (3) To obtain information as to details of methods which have been tried in experimental physiology, pathology, or pharmacology. (4) To trace the origin and development of medical organisation in a particular city or country. (5) To obtain data for a comparison of the laws and customs of different countries affecting medical education.

We have so often experienced the truth of the following that we are tempted to quote it, for we believe it reflects the feelings of many of our most valued readers:—

"In literary research for bibliographical purposes, or to trace the

development of theories or institutions, the work must be done mainly by the writer himself; and while at the commencement he may be greatly helped by systematic works of medical bibliography, he will soon find himself wandering off into all sorts of curious by-paths and out-of-the-way corners, into which he is led by obeying the golden rule for this kind of work—namely, to 'verify your references.' In the first book which he consults he will probably find two or three references, which will indicate to him as many different books or articles which he will wish to consult. When he gets these, each of them will probably give a few more references, to be hunted up in like manner.

"Meantime, it will not be an unprecedented or very remarkable occurrence if, in the course of his reading, he stumbles over several interesting points not precisely connected with his original quest, but still having some relation to it, and which seems a pity not to look up while he is about it; so he makes note of these, and of the references connected with them, and sends for a fresh lot of books. He finds also that some of his quotations are erroneous, that 'some one has blundered or plagiarised,' and proceeds, with a sense of refreshment and satisfaction, to hunt down the culprit. And so the work expands, for, as Teufelsdroekh remarks, 'any road will lead you to the end of the world.'"

Medical and Surgical Report of the Tyrone County Infirmary for 1886. Omagh: Office of the *Tyrone Constitution.* 1887. Pp. 8.

The active and skilful surgeon of the Tyrone County Infirmary, Mr. Edward Thompson, M.B., F.R.C.S.I., informs us in this Report that, during 1886, 475 patients were admitted to the institution, 1,086 persons from all parts of the county were prescribed for gratuitously, 26 trusses were issued, and in 72 instances admission was refused. In all, therefore, 1,698 patients were either relieved or sought relief at the hospital. Of the patients admitted more than half came from a distance of over ten miles, which shows how largely the benefits of the institution are availed of by the inhabitants of the county. Ninety operations were performed, including 2 amputations of the thigh and 2 of the arm, 3 amputations of the breast, 4 partial amputations of the hand and 2 of the foot, 1 excision of the wrist, 1 osteotomy of the thigh, 1 tarsotomy of the foot, 2 strangulated femoral herniæ, 13 cancer lips, 2 club

feet, 1 enucleation of eyeball, and in 26 cases tumours of various sizes were successfully removed. This operation list presents a clean sheet as regards mortality, which is a most gratifying result. Fourteen fractures and 4 dislocations were also under treatment. The patients admitted were classed as follows:—Medical, 166; surgical, 222; diseases of the eye, ear, and throat, 53; and of the skin, 33.

The income of the Infirmary was £1,509 18s. 10d.; the expenditure, £1,464 1s. 1d. Last year there was a credit balance of £205 19s. 8d. The Governors were, therefore, enabled to commence a new year with a considerable sum in hands, which would, it was expected, enable many useful and much-needed improvements—such as the construction of a proper laundry—to be effected.

The daily average number of intern patients was 41·2, and their cost £3 1s. 8d. The cost of each occupied bed was £35 14s. 2d., or about £15 per bed lower than the cheapest Dublin hospital. The average duration of each patient in the hospital was 26¾ days. Thirteen deaths took place during the year, which represents a very moderate death-rate, considering the exceptionally severe nature of most of the cases under treatment.

Dr. Buchanan, who was appointed House Surgeon at the beginning of the year, resigned his post in September, and was succeeded by Mr. Richard Thompson. The appointment of a House Surgeon has been a decided success, and has greatly enhanced the value of the Infirmary.

Ophthalmic Surgery. By Robert Brudenell Carter, F.R.C.S., and William Adams Frost, F.R.C.S. London: Cassell & Co. 1887. 8vo. Pp. 554.

Messrs. Cassell & Co. have been hitherto very successful in their series of "Clinical Manuals for Practitioners and Students of Medicine," and the present volume is quite worthy of their high reputation. The general get-up of the book is good. The paper is very thin; but the type is so small, though clear, that a very great amount of matter has been condensed into an unusually small space. The illustrations are numerous (91 engravings and one chromograph), well chosen, and executed in a manner with which little fault can be found.

The dual authorship of this work is a guarantee of its worth,

for, as mentioned in the preface, each writer has attached his initials to the chapters which he has written, with the view of assuming for them individual responsibility; but they have each of them read over the whole of the proofs, and must be taken to be in general agreement with regard to all portions of the volume.

Mr. Carter's portion includes the chapters on "Anatomy and Physiology," "Examination of the Eye," "The Cornea and the Anterior Zone of the Sclera," Diseases of the Iris," "The Lenticular System," "Glaucoma, Primary and Secondary," "Optic Disc, Retina, Choroid, and Posterior Half of Sclera," and "Amblyopia and Amaurosis;" whilst Mr. Frost has taken the chapters treating of "Affections of the Eyelids, Lachrymal Apparatus, and Conjunctivæ," "Affections of the Vitreous," "Colour Vision and its Defects," "Injuries," "Errors of Refraction," "Affections of the Ocular Muscles," and "Affections of the Orbit."

The aim of the authors has been "to place before the profession a concise account of the present state of Ophthalmic Surgery," and therefore there is little that can be regarded as new or interesting to the specialist in the book, but to the student or general practitioner it will form a safe and intelligible guide. There are, however, many minor points which will require modification or explanation in a subsequent edition. At page 401 he says:—"The amount of accommodation which an individual is capable of using steadily diminishes *from the age of ten years.*" In all probability it begins to diminish long before that age; but the difficulty of getting younger children to submit to intelligent testing has made Donders, and those who followed him, commence their scale from that age. On the following page (402) he defines the amplitude of accommodation as follows:—"In emmetropia it is represented by a lens having its length at the near point." And this strange statement is followed by a somewhat perplexing explanation. Lower down on the same page he says:—"To correct the presbyopia in an emmetropic patient it is only necessary to give convex glasses, which will make up the difference between the amplitude of accommodation that the patient possesses and 4·5 D." No explanation of why 4·5 D. is chosen more than any other glass is given, and we hardly think that the average student or practitioner will connect it with the "eight inches" mentioned half a page before.

There is a very great want of lucidity in this whole chapter, and Mr. Frost would do well to consider how he can, in the next

edition, make it more palatable and digestible, so as to suit the somewhat weak appetite and over-taxed assimilating powers of the now-a-day student.

The Refraction of the Eye. A Manual for Students. By GUSTAVUS HARTRIDGE, F.R.C.S. Third edition, with 92 illustrations. J. & A. Churchill. 1888. 8vo. Pp. 240.

As we have already on two occasions given a full criticism of this book, we need not again repeat ourselves. The author says that in this edition "the whole has been carefully revised, some chapters partly re-written, and a few more woodcuts added, with the hope of making the book more worthy of the favour with which it has been received here and abroad." Of the first edition we had to speak in anything but flattering terms, and therefore we are the more pleased to be able to note a vast improvement in each succeeding edition. The book as it now stands gives a very excellent account of the subjects of which it professes to treat, and we can recommend it to those requiring such.

STENOCARPIN.

IN a paper recently published in the *New York Medical Record*, Dr. Claiborne gives an account of the new local anæsthetic, stenocarpin. The alkaloid was extracted from the leaves of an acacia which is believed to be the *A. stenocarpus*, by Mr. Seward, at the suggestion of Mr. Goodman, of Louisiana, who had accidentally noticed the anæsthetic effect of the leaves. Two drops of a 2 per cent. solution dropped into the eye of a cat or rabbit produces complete insensibility of the part; five minutes after the application the conjunctiva and the cornea can be pricked, twisted, or scraped, without causing the least pain. After from ten to fifteen minutes, in addition to anæsthesia, mydriasis sets in, which reaches its maximal intensity in twenty minutes, and continues for about thirty-six minutes. The anæsthesia begins to disappear about an hour after the stenocarpin has been applied to the eye. Local anæsthesia of any part of the skin may be produced in the same way. Dr. Claiborne is of opinion that stenocarpin lessens the tension of the eyeball—an effect which might make it a useful remedy in cases of glaucoma.—*Brit. Med. Jour.*, Oct. 1, 1887. [With such an introduction it cannot be other than a surprise to learn that stenocarpin is merely a fraudulent mixture of hydrochlorate of cocaïn and sulphate of atropin.—THE EDITOR.]

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—Robert M'Donnell, M.D., F.R.S.
General Secretary—W. Thomson, M.D.

SECTION OF PATHOLOGY.

President—C. B. Ball, M.D.
Sectional Secretary—J. B. Story, M.D.

Friday, December 2, 1887.

The President in the Chair.

Bilateral Anophthalmos.

Mr. Neary read a paper on a case of bilateral anophthalmos, and exhibited a child, aged six weeks, who had been born suffering from this anomaly. The orbits and eyelids were well formed, but nothing representing an eyeball could be detected in either orbit.

Congenital Microphthalmos.

Dr. Fitzgerald communicated a case of congenital microphthalmos, the living specimen being present, and showing two undeveloped globes, with cornea and iris, but little or no anterior chamber. Illumination of the fundus was impossible. The father of the child thought it could see when light was brought into the room, but after having several times made trial with both lamp and ophthalmoscope, he (Dr. Fitzgerald) had been unable to satisfy himself that the child saw anything. The mother in this case gave a history of a fright. He could not say what the period of pregnancy was.

Dr. Story said the case shown by Mr. Neary was a rare one. It was comparatively easy to explain the occurrence of microphthalmos as

appearing in Dr. Fitzgerald's case, for once the eyeball had begun to develop and a real eyeball was there, any interference with the process of development might easily prevent it from continuing to grow, and leave it a stunted and deformed organ. But how an eyeball that had once begun to develop should afterwards disappear entirely—which he assumed to have been the case in Mr. Neary's patient—was extremely difficult to understand. It was even still harder to conceive how the child could be there at all if the eyeball had not begun to develop, because the formation of the primary optic vesicle, on which the growth of the eye depended, was such an early fœtal event, and so intimately associated with the growth of the brain itself, that it was difficult to understand how it could fail to appear and allow the child's development and the growth of the child's brain to proceed in a normal manner. It seemed to him that this and other cases of anophthalmos could be explained only on the supposition that the eyeball did develop both primary and secondary optic vesicle, and that some time afterwards some interference took place with its growth which prevented the further formation of the eyeball, and that the vesicle shrunk up and the nervous tissue connecting it with the brain degenerated into a fibrous cord, which would explain the *post-mortem* appearance of an absence of the optic chiasma. Atrophy of the nerve would proceed backwards from the eyeball to the brain. It was possible to explain the occurrence of the orbit, the eyelid, and eyelashes, &c., only on the supposition that there had been at some time or other an eyeball there to start the growth of those things; for how the orbit and the eyelids would form themselves at all, if they had not the presence of the eyeball as an inducement to start them in the development was extremely difficult to conceive. So that it must be assumed that there was originally an optic vesicle, and that it subsequently suffered some checks in its growth and then disappeared, as they could find no trace of it; but that the parts about the eyeball grew subsequently, having once got the start in development that was afforded to them by the presence of the primary eyeball.

Dr. Mapother said that, seventeen years ago, he brought home five eyeless fishes from the Mammoth Caves of Kentucky. They lived for five months in the Zoological Gardens and then died; and he and the late Dr. John Barker dissected them. In not one was the slightest trace found of any organ of vision, or of any optic nerve leading in the direction of it, but there was a highly-developed branch of the ophthalmic distributed over the region where the eye ought to be. The fishes were each about four or five inches long, and none had the slightest trace of anything like an eyelid or apparatus of vision. Professor Wiemann, of Harvard University, Mass., stated the same with respect to the fishes from the Kentucky Caves that he had examined. These creatures had most extraordinary powers of hearing, and never could be caught except at

night when the caves were perfectly silent; for during the day, from morning till night, crowds were always passing through the caves. He obtained his specimens with the aid of some negroes between four and five o'clock in the morning. They died in the Zoological Gardens, as most of the gold fishes did, from a fungous disease of the gills. He had thought that by breeding them here some redevelopment of the eye might be arrived at, but that hope was frustrated, and he had never been able to ascertain the sex of the specimens. The complete darkness which must have reigned in the Kentucky Caves for thousands of years must have obliterated the eyes of these fishes. There were also crustaceous and other animals in the waters of the caves, which were likewise perfectly blind. The fishes were perfectly etiolated also.

Professor Purser said he had never seen a case of anophthalmos until that evening. In order to account for the development in the child in question of the orbits and other annexes of the eyes, not only must the primary optic vesicles have been developed, but the development of the eyes must have gone on to a considerable extent. The development of the primary optic vesicle alone would not have been sufficient to start the growth. He had been in the habit for a number of years of hatching eggs artificially and of studying the fowl so produced in the different stages of their development, and it was by no means uncommon to meet with abnormalities in them. In several specimens there was complete atrophy of the eye on one side; and in one embryo there was atrophy of both eyes, the three cerebral vesicles being well developed, but the optic vesicles being represented by little buds growing from the cerebral vesicles. In some of the fowl the eyes were well developed, and in one case of unilateral atrophy the eyelids were beginning to develop. He thought the absence of the optic chiasma was easily explained. The optic nerve was not developed from the cerebral vesicle at all, but from the brain outwards towards the vesicle. The optic nerve fibres were an outgrowth from the brain towards the eye, and they spread out on the inner surface of the retina. The right eye grew out from the right side of the brain, and the left eye from the left side. The optic chiasma must be a late development, and it was more likely that it grew from the brain to the eye than from the eye back to the brain; so that if the eye were destroyed at an early period of embryonic life there would be no reason to suppose that the optic nerves and chiasma would be well formed. The chief question was what kind of process it was which destroyed the optic vesicle. It must be the same as that which destroyed the cerebral hemispheres in cases of acephalus. In those cases the cerebral hemispheres after their formation underwent a sort of hydrocephalic change, and then burst, and the fragments formed the pulpy mass that was found at the floor of the skull. In like manner the optic vesicle, which was a delicate structure, perhaps, burst after it had reached a certain stage, and then became

atrophic. It was curious that the accident should have affected both eyes at the same time.

Mr. A. H. Benson observed that one point of interest in Mr. Neary's case was the small size of the eyelids at present. He (Dr. Benson) was shown the case by Mr. Neary three weeks ago, and the eyelids were then very much larger than they were now. At the time of birth the child could open the eyelids; when he saw it first that was done with difficulty, and a discharge was commencing, and now it could not open its eyelids.

Professor Bennett said that an intermediate position between the fishes that Dr. Mapother spoke of and the present case was the mole. Certain pathologists asserted that the optic nerve was present in the mole; but some five years ago he spent a good many hours in dissecting moles, and in those that he examined he found a globe and pigmented spots but no trace of lids, and no optic nerve whatever, but only a branch of the fifth nerve, as in the case of the Kentucky fishes. He had examined some insecta from the Kentucky caves and found in them no trace whatever of either globe or eye or cornea, or any nerve whatever leading in the direction of a visual organ. But it was quite clear from other published dissections that moles possessed the optic nerve to some extent. In that creature the condition was one of developed optic vesicle, retina, and eye, but subsequent atrophy in consequence of its mode of life—all those features being of course intensified by heredity.

The President observed that many of the animals found at great depths of the ocean were devoid of eyes. There were crabs, prawns, and other crustaceans, which were in other respects allied to the stalk-eyed crustaceans, but were absolutely devoid of eyes, at a depth of 1,000 fathoms—the only animals that had eyes were provided with apparatus for generating their own light. Some of the fishes carried their own lighthouses in the shape of little light-producing spots on their noses.

Mr. Neary replied.

Infantile Paralysis.

Mr. Tobin read a paper upon the subject of infantile paralysis, and exhibited a lower limb which had been affected by the disease.

Dr. Finny remarked that the degeneration of the limb might have been due to an injury to the nerves occasioned by the fall.

Mr. Tobin, in reply, said the nerves had undergone the same atrophy as the rest of the surrounding parts. But it seemed to him that if the atrophy of the nerves had resulted from the injury, they would not have had the shortening of the bones that existed in the case. The fact of the bones having ceased to grow pointed rather to the lesion being central and situated in the spine. If that were not so, the case perhaps was not one of infantile paralysis at all.

The Pathology of Dysentery.

I. Mr. Conolly Norman read a paper, in which he described at some length the morbid appearances in nine cases of dysentery. In two of these there was perforation of the intestine, and in one multiple abscesses of the liver. Out of a population of about eleven hundred in the Lunatic Asylum under his charge, Mr. Norman had had one hundred and twenty cases of dysentery in about fourteen months, with twenty-two deaths.

II. Dr. Walter G. Smith read a case on dysentery, with gangrene of left foot. A young married woman, aged nineteen years, was admitted into hospital, September 2nd, 1887, suffering from intractable diarrhœa of a week's standing. Her illness had commenced suddenly, subsequently to eating some stale fish. When admitted she was in a state of extreme prostration; pulse 120, temp. 99·5°. Very frequent motions, thin and bloody. No treatment proved of any avail, and she died after a week's stay in hospital. Two or three days after admission her left leg was observed to be very cold. It was painful, especially in the popliteal space, and purple patches appeared on the foot. These increased and deepened. Dry gangrene attacked the toes, and spread over the sole of the foot.

Post mortem.—Liver and kidneys normal. No trace of peritonitis, only some patches of peri-splenitis. Mesenteric glands enlarged. Ileo-cæcal valve healthy. Mucous membrane of the large intestine, from cæcum to anus, extensively diseased, deeply injected, and with ecchymotic patches. Innumerable ulcers of various shapes and sizes. Rectum presented a worm-eaten appearance. Many shreds of adherent false membrane. No vascular seclusion found to account for gangrene.

III. Dr. Purser described and demonstrated the appearance in three cases of dysentery. The large intestine was in each the seat of an intense diphtheritic inflammation.

IV. Dr. James Little submitted a case of dysenteric ulcers in the rectum with gangrenous ulcers of the stomach. In the middle of last October a man, forty-five years of age, sought admission into the Adelaide Hospital, suffering from severe abdominal pain. It was ascertained from independent sources that he had been of very intemperate habits. He said he had had a cough for many months, and a physical examination showed that he was suffering from phthisis, but not in an advanced stage. In the summer an abscess had formed near the rectum, in consequence of which he was for four or five weeks in the Richmond Hospital, and he left it with a fistulous orifice discharging near the rectum. He remained at home for several weeks in broken down health, and suffering from irritation at the lower end of the rectum. Seven days before he came into the hospital he was, while sitting at the fire, seized with severe pain in the right side of the abdomen, apparently in the direction of the

hepatic flexure of the colon. He remained at home suffering from the pain, and from that time until his admission to hospital his bowels acted only once. At the time of admission he complained of pain in the epigastrium, which was swollen and so exquisitely tender that he was unwilling to be examined. After some days the severe pain subsided, but his bowels, which during the first few days that he was in hospital had remained confined, became, without anything having been done to cause such a change, very loose, and the looseness continued from that time until his death. On account of the great discharge of purulent matter there was great difficulty in examining his stools. He was very unwilling to be moved or disturbed, and he (Dr. Little) did not see any stools that had a dysenteric character. He died a fortnight after his admission. A *post mortem* was made by Dr. Bewley, who found small cavities in the lungs. The liver was very large, and had the appearance seen in persons who died of acute fever. The under-surface of the left lobe of the liver was adherent to the anterior wall of the stomach, and it suddenly gave way and a quantity of purulent matter escaped. A large sloughy-looking ulcer was found in the anterior wall of the stomach, the roof of which was formed by the lower portion of the left lobe of the liver. There was also a small ulcer in the stomach. The sloughy-looking mass connected with the large ulcer was like what would be left by a large anthrax, and it communicated with the stomach by an orifice which could be seen in the specimen. The stomachic ulcer was not a chronic one, for there was no thickening of the edges, and the surface of the ulcer was covered with gangrenous-looking material. The cæcum was found to be rather extensively ulcerated. It contained several ulcers, but they were rather superficial. In the transverse and descending colons and at the sigmoid flexure ulcers were also numerous. The maximal amount of change was in the rectum and in the cæcum. The question was—Had the man suffered from dysentery, and were the ulcers, and other conditions of the stomach, the result of superficial abscesses of the liver opening into the stomach? It was evident that something must have suddenly happened at the time he was seized with the pain, and no doubt at that time the mischief in the liver and stomach first began.

The PRESIDENT remarked that the papers of that evening ranked amongst the most important that had been communicated to the Section. Recently, while going round the Pathological Museums of Dublin and London, he had been struck by the number of the specimens of dysenteric ulceration of the large intestine. The specimens of that kind outnumbered all the specimens of other lesions of that portion of the intestine. That might be explained by the fact that the appearances were so prominent and well marked that the specimens were preserved, while others were passed by.

Professor Bennett remarked that Mr. Norman had not given them any information as to the cause of the pathological appearances described in his cases.

On the motion of Dr. Finny, seconded by Professor Bennett, the discussion was adjourned.

SECTION OF MEDICINE.

President—James Little, M.D.; President of the King and Queen's College of Physicians.

Sectional Secretary—A. N. Montgomery, M.K.Q.C.P.

Friday, January 27th, 1888.

The President in the Chair.

Nervous Diseases—Congenital Spastic Paraplegia ; Ataxic Paraplegia.

Dr. C. J. Nixon read a paper on the above subject. [It will be found at page 193.]

The President observed that it was evident Dr. Nixon did not share the opinion of a distinguished physician, that "all diseases of the nervous system are either syphilitic, or they are not. If they are not, you will do them no good. If they are syphilitic, treat them with iodide of potassium."

The Rev. Dr. Haughton said the distinction drawn by Dr. Nixon between the sensory and muscular nerves was of great importance, and reminded him of the fact that it was a metaphysician and not a physician who had brought to light the existence of a sixth—a muscular sense. There was one thing they had certainly determined, although the difference was exceedingly small—namely, that the rate of transmission of a sensation and the rate of transmission of an order from the brain to use muscular action differed slightly, and everything seemed to show that the mode of communication with the external world which took place from the sensorial nerves and from the nerves that transmit or give orders for muscular action differed.

Dr. Bewley related the symptoms presented by a man suffering from ataxic paraplegia, under his care, in the Adelaide Hospital. This man, aged thirty-eight years, with no history of syphilis or alcoholism, had been in perfect health until April last, when he began to suffer from pain in the lower lumbar region of his spine on going to bed. The pain continued, gradually growing worse, till the beginning of July, when he noticed that the boards he walked on felt soft, as if carpeted. His walk at the same time became unsteady. On admission to hospital, on July

12th, the movement of both legs was very ataxic; the muscular sense was much diminished; the deep reflexes were increased, the knee-jerks being violent, and clonus being marked in the right ankle, and slightly present on the left; there was slight diminution of sensation in both legs. At this time there did not seem to be any paralysis of the muscles of the legs. The eyes were perfectly normal; every other part of his body was healthy. The incoordination of the leg-muscles increased till the end of July, when it was extreme; then rigidity and jerking came on, and the deep reflexes became excessive, ankle clonus, rectus clonus, and a clonus in the peronei muscles, obtained by inverting the foot, being very marked; and as the legs became more stiff and powerless, ataxy became less obtrusive. Since the middle of September the patient had been unable to leave his bed. He suffered throughout his illness from tightening pains in his legs, and also from severe pains in the bones, which lasted usually for some hours. He had had occasionally retention of urine. At present the legs were quite rigid and flexed at all the joints. There was very considerable anæsthesia, but no tendency to bed-sores. He suffered frequently from a girdle pain at the level of the umbilicus. The case was remarkable for the great rapidity with which the symptoms had come on. Within a fortnight after the first trouble had been noticed in the legs, ataxy was extreme, and, within two months, the man was unable to move his legs, owing to their rigidity. The affection of the sensory nerves was indicated by the anæsthesia and pain attributable to slight sclerosis of the postero-external column in the lumbar region, which was sufficient to cause irritation of the sensory nerve roots, but not sufficient to cause paralysis. Locomotor ataxy and spastic paraplegia were two extremes between which might be met with almost any combination of symptoms.

Dr. Walter Smith mentioned a case in Sir Patrick Dun's Hospital, as illustrating one of the most interesting phenomena of spinal diseases—namely, the different modes of transmission of different sensory impulses. A few days before Christmas last a young man complained of a halt in the right leg, and, in a few days afterwards, a similar halt in the left, with retention of urine, which was followed by incontinence. He was admitted into hospital perfectly paraplegic. In a week or two huge bed-sores formed over the sacrum. For several days after admission the principal phenomenon was the almost complete loss of the perception of painful impressions up to the level of the pelvis. Pricking him with a pin, or twisting the skin, he did not perceive; yet in all parts of the limbs, down to the very toes, he could feel, and localise accurately, the touch of a feather; while he was thoroughly insensible to the most painful impressions, and unable to discriminate between heat and cold. The symptoms pointed to acute destructive inflammation of the lower part of the spinal cord. The symptoms, and combinations of symptoms, of spinal

diseases varied so immensely, that physiologists were not at present in a position to classify accurately even the groups of symptoms, much less to refer them to distinct pathological changes, beyond the degeneration of the cord, the exact nature of which was not determined.

Dr. Nixon, in reply, said it was not to be expected that all cases of ataxic paraplegia would be precisely similar. On the contrary, they must vary, inasmuch as the pathological changes in any two cases would vary, and accordingly as the disease became more pronounced in the lateral tracts in one case or in the posterior. Dr. Smith's case was of very great value as illustrating what had been noted by the experiments of physiologists—namely, that the ordinary tactile sensations were conducted by entirely different paths from those of common sensibility to pain and temperature. In any case of paralysis the first point to determine was whether it was of a cerebral or spinal nature; if spinal, then the different forms of paralysis existing and the conduction of certain impulses, whether motor or sensory.

Heredity in Hæmorrhagic Purpura.

Dr. J. F. Knott read a paper on "Heredity in Hæmorrhagic Purpura."

Mr. Foy said the treatment recommended in long-continued cases by some of the German writers consisted of dilute sulphuric acid and sulphate of sodium until free purging was produced.

Dr. J. F. Pollock said he had a case under treatment which he could not call hereditary, as none of the patient's family had the complaint before her. A lady, aged sixty-seven or sixty-eight, suffered from epistaxis, hæmorrhage of the gums, and purpura all over her forehead, cheeks, and legs. The blood coagulated. He administered iron in large quantities without accomplishing the good he expected. He also tried large doses of ergot, sulphuric acid and digitalis, which had some effect, but not what he desired. Then he put her under arsenic, giving her the liquor arsenici hydrochloricus of the Pharmacopœia; and that certainly did some service. But what he found most valuable of all the remedies was hazelin, to which the bleeding yielded for the time. The hæmorrhage, however, had returned again, though when he injected the nostrils or washed the gums, the hazelin checked it.

Dr. C. F. Moore had tried with good effect $\frac{1}{2}$ to 1 gr. doses of ipecacuanha and opium, with 2, 3, or 4 grs. of Dover's powder, or turpentine and laudanum. By bringing about the action of the liver the hæmorrhage will be relieved.

Dr. Knott replied.

The Section adjourned.

SECTION OF STATE MEDICINE.

President—Charles Frederick Moore, M.D.

Sectional Secretary—E. MacDowel Cosgrave, M.D.

Friday, February 3, 1888.

The President in the Chair.

The President's Address.

The President delivered an Address on the importance of, and advances in, Preventive or State Medicine. [It will be found at page 203.]

The Medico-Forensic Aspects of the Coachford Poisoning Case.

Dr. C. Yelverton Pearson read a paper on this subject. [It will be found at page 212.]

The Rev. Dr. Haughton said Dr. Pearson had taken the straightforward, manly, and wise course in appealing from the newspapers and the lawyers to a Court of his brother medical men, who were the competent judges of the manner in which he had discharged a most difficult, responsible, and painful duty in bringing to a well-deserved end of a bad life a man who was a disgrace to the medical profession. It was a difficult thing to avoid mistakes in a complex case, and Dr. Pearson had made one which would teach him not to trust to memory before lawyers, though nothing but the art of lawyers could distort his evidence into the statement that $2\frac{3}{4}$ or 3 grs. were found in the liver. But suppose he had stated he found 3 grs. in the liver itself, that was a perfect possibility. It was not generally known that had Palmer, who was hanged for poisoning his horse-dealing friend with the (in his time) new poison, strychnin, been acquitted, he would have been placed in the dock again on a charge of poisoning his mother with antimony. Both arsenic and antimony made for the liver, and he had himself weighed in London a package of antimony which was taken from the liver of Palmer's mother, and it scaled between 6 and 7 grs. If the arsenic was slowly administered such a quantity as 3 grs. of arsenic in the liver was exceedingly possible. He had, however, more experience of strychnin poisoning than of metallic poisoning. In conjunction with Dr. Apjohn and Dr. Emerson Reynolds, he had the task of ascertaining whether or not the celebrated greyhound, Master Magrath, had died of strychnin, and he established the fact that he had not died of strychnin. In other cases he established the fact to which Dr. Pearson had called attention—namely, that strychnin was an indestructible poison for many weeks—in fact, remained absolutely perfect, undisturbed and intact in the bodies of animals that had lain ten weeks in their graves. The strychnin part of the poisoning in Mrs. Cross's case

was, however, a difficulty in his mind. There was no solution for the screams. But suppose, when he found his wife would not die, he adopted a practice known in his (Dr. Haughton's) native County of Carlow, of putting a pillow on the objectionable person's face and sitting on it for ten minutes, she would give a scream first; and it was quite possible that in Mrs. Cross's case a pillow was the immediate cause of death and not the strychnin. In any case, he was certain the whole world was convinced that a righteous judgment was come to, and that if Philip Eustace Cross had not been hanged, a gross outrage would have been committed upon public morals in Ireland.

Sir Charles Cameron said it would be impossible to criticise Dr. Pearson's paper from want of time preventing him reading the details of the mode of investigation; but from the conclusions drawn from his experiments he thought Dr. Pearson had conducted the investigation in an admirable manner, and that the results were such as any competent chemist would have arrived at under the same conditions. He did not share in the hostile opinions expressed, and these opinions were very few and not worth taking into account in face of the judgment of the profession at large, that Dr. Pearson was competent to undertake the investigation, and had done his work thoroughly well. He agreed with Dr. Haughton as to the length of time strychnin might remain in the stomach and viscera and body, generally of an animal. In the case of a Mr. King, who was poisoned at Limerick, it was necessary that the viscera of a dog should be examined, and he produced nearly $\frac{1}{2}$ gr. weight of strychnin from the body fourteen days after death. A dog had been given some bread and butter, and the animal died shortly afterwards; four months later an Inspector of Constabulary brought him the dog, and having operated on the whole animal he extracted more than $\frac{1}{4}$ gr. With regard to the Palmer poisoning case, there was no strychnin detected, and Professor Taylor was subjected to very strong animadversions on that account. He did not agree with the statement in Meymott Tidy's "Medical Jurisprudence," that when arsenic was taken in small quantities extending over a lengthened period there were greater lesions.

Dr. Pearson observed that the statement was that when taken for a long time the intestines were more apt to be affected.

Sir Charles Cameron said he met with a case in which a very small quantity of arsenic was taken by cows, and four or five died from arsenical poisoning. They had been given each about $1\frac{1}{2}$ lbs. of Glauber salts, containing ·47 per cent. of sulphuric acid. A very small dose caused death; but no lesions were detected in the stomach. Being interested in the fact that the one-hundredth part of a grain could be weighed, he asked whether any crystalline bodies from muscular tissue might possibly be included in that very minute quantity. He had often found crystals of sulphur assuming the form of crystals of arsenic so as to deceive him. Sulphur gradually pre-

cipitated in the crystalline form, and he had been deceived in the appearance of crystals, thinking they were arsenic, until he found they were nothing more than crystals of sulphur.

Mr. Doyle said he was one of the minority who as yet did not see evidence brought forward on which to condemn Mr. Cross. He did not pretend to be a chemist, but he felt bound to deal with facts as he found them; and from all Dr. Pearson had stated, he would have been very anxious to obtain the result of another analysis and *post-mortem* examination conducted by another gentleman. Chemical analysis was not such an easy process at all, and, from what he knew, it was becoming more complex than ever. A witness was sworn to tell the truth and the whole truth, and therefore he should give all the facts connected with the case; and yet Dr. Pearson now stated he found in the body ptomaïns, of the discovery of which he did not tell the jury at all. They all knew that ptomaïns constituted a most deadly poison—the most deadly poison they knew of, which was formed in their own bodies. Suppositions should be put out of the question in a matter of life or death. There was the supposition about using arsenic as a cosmetic. Dr. Pearson supposed that if used as a cosmetic it must have been in the liquid and not in the solid form. But they knew that even if used in the liquid form and applied externally to the body, it was a curious fact that it always made to the stomach and would be found there. As to the absurdity of Mr. Cross not recognising typhoid fever, there were hundreds of medical men who would not recognise a case of typhoid fever. He had himself seen cases of typhoid fever which might be easily accounted for as occurring from poisoning. Mr. Cross was blamed because he said his wife had typhoid; but it did not turn out that the case was not typhoid, and that was a piece of evidence which should have been put out of the question. The case might have been one of typhoid from all they knew of the symptoms. There might have been typhoid and the poisoning too. The two conditions were not incompatible. He made these observations, believing that if they wanted to advance medical science it was best to tell a man his faults, and not agree with them.

Dr. Tichborne said the molecule of strychnin was a very staple one, and therefore there was no difficulty in detecting strychnin. The only difficulty was in getting chloroform sufficiently pure to stand the reaction of the sulphuric acid. As regards the arsenic, while he did not like to dogmatise, he doubted about the liver being able to absorb 3 grs. At the same time Dr. Pearson stated there were 1·20 grs. He wished to know did that mean As or As_2O_3.

Dr. Pearson—It is the oxide.

Dr. Quinlan thought the case was a plain one. The starting-point was that there was a poisonous dose of arsenious acid in her stomach, and the question arose how did it get there? The facts indicated that it

got there only by poisonous administration. The idea that Mrs. Cross took arsenic for her complexion, as was the custom of women in the eastern parts of the Austrian Empire, was not to be entertained; for Mrs. Cross was a woman of mature age. The next hypothesis was that it was administered medicinally. From his own experience, arsenic was always given in the fluid form in minute doses, and it would be impossible in that way to produce the crystals in the stomach and duodenum. Moreover, the condition of the arsenic in the undissolved state showed that the quantity found must have been administered in the last few hours. As regards Dr. Haughton's view, he did not believe the "Carlow method" had been used, or Mrs. Cross would have exhibited symptoms of suffocation.

Sir Charles Cameron asked whether the ptomaïn was not an oily ptomaïn, and quite unlike a crystalline body such as strychnin.

Mr. Broomfield did not see any force in the argument as to how the arsenic was administered. Mr. Cross would not be more likely to give it in the crystalline form than any other medical man to prescribe it, or conversely, he would be just as likely as any other medical man to administer it in the fluid form.

Dr. Quinlan suggested that it could be easily administered in sago or other food.

Mr. Kennedy inquired whether there was anything in the evidence pointing to the way in which the strychnin was administered—for instance, any found in unfinished food.

Dr. Pearson—There was no evidence on that point.

Mr. M'Cullagh, without questioning the justice of Mr. Cross's sentence, said he knew of ladies taking arsenious acid diluted, again and again; it was quite common.

Dr. Pearson, in reply, said most of the criticisms would not have been called for had he read his paper *in extenso;* but had he done so there would not have been time for discussion, and he was more anxious to hear the opinions of others than to express his own. That Mrs. Cross's screams were due to smothering, as suggested by Dr. Haughton, he did not believe. Mr. Cross was a man over six feet high and extremely powerful, and if he were to employ force he would not be likely to do so in such a way as to allow a weak woman to continue screaming four or five minutes. Therefore, in assuming smothering, the screaming was out of the question. But there were two possible explanations. The screaming might be due either to the painful convulsions produced by strychnin if administered at the time in a poisonous dose, or the arsenic might have caused convulsions at the close. He did not swear she died of strychnin poison. The quantity he found was a medicinal one. But assuming the strychnin was not given with the intention of shortening life, it must be accounted for in another way. He accounted for it as

having been given accidentally. Mr. Cross did not keep his medicines in a very careful manner, and the strychnin might have been left knocking about the surgery. In like manner, if the evidence went to show that the lady died from a single dose of arsenic, Mr. Cross could never have been convicted; because it might be shown she took it by accident. But the symptoms described by Miss Jefferson, commencing on the 10th May, precluded the idea of arsenic having been administered in medicinal doses or been taken by accident. Mr. Doyle had observed that it was his duty to have mentioned to the jury that there was a ptomaïn. But a ptomaïn could not possibly be confounded with strychnin, and was to be regarded as a product of putrefaction, as he believed it was, and therefore a normal product of the body; so that he might as well be expected to tell the jury he found fat and all the other components of the human body. He had satisfied himself that he also found strychnin, with which no ptomaïn could be confounded, having regard to the manner in which he tested for strychnin, as described in his paper. Mr. Doyle had also suggested that arsenic applied externally produced the physiological effects on the stomach; but did he suggest that external application would cause white arsenic to be present in the solid form in the intestines? He was sorry that time did not permit to read the detailed account of the mode of chemical examination pursued.

The Section adjourned.

EXTERNAL URETHROTOMY WITH RETROGRADE CATHETERISATION.

Arch. Dixon, M.D. (Louisville, Ky.), in a case of rupture of the urethra caused by a man falling astride the back of a chair, performed the operation of retrograde catheterisation by supra-pubic incision, then passing a catheter through the urethro-vesical orifice to the posterior end of the laceration. The rectum was ballooned and the supra-pubic puncture enlarged. After several ineffectual efforts to find the orifice with a catheter, a sound was substituted, which was without difficulty passed and made to protrude in the perineal wound. The incision was then lengthened, and, guided by the sound, a No. 12 Nélaton catheter was introduced into the bladder and left there.—*American Practitioner and News*, June 25, 1887.

PROTRACTED GESTATION.

Dr. O. D. Fitzgerald, Lathrop, Mo., reports a case of pregnancy in which the gestation was protracted to 409 days. The patient was a married woman, thirty-eight years of age, and the child was her eighth.—*St. Louis Courier of Med.*, Aug., 1887.

CLINICAL RECORDS.

A Case of Carcinoma Gastri.[a] Reported by Mr. Alfred F. Penny.

The following are my notes on a case of gastric cancer which was recently under the care of Dr. Guy L'Estrange Nugent at the Whitworth Hospital, Dublin:—

E. K., labourer, aged fifty-eight years, was admitted into the Whitworth Hospital on December 7th, 1887. His family history was good, neither his parents nor relatives having ever suffered from malignant disease. Previous to his last illness he was comparatively healthy, a moderate drinker, but indulged in smoking to excess. Three years ago he observed that his appetite completely left him, so that he had no relish for food of any description. Soon after this, symptoms of dyspepsia appeared, coupled with gastrectasis—the latter especially causing him much uneasiness. Last April he began to spit up a quantity of a black substance, which he said often came up into his mouth in gulps whilst walking in the street, and which sometimes had a bitter and sometimes a sweet taste. He noticed also that his abdomen and feet were somewhat swollen on his getting out of bed in the morning, but that the swelling subsided at night. Since the commencement of the disease he has slept very badly, and some nights not at all; has had frequent attacks of vomiting, which were worst after taking food; could drink only in small sips; was greatly emaciated, and suffered from intensely cold feet.

On examining the abdomen, a distinct hard tumour could be felt in the right hypochondrium, about the size of a hen's egg, which elicited a dull sound on percussion. The tongue was small, red, and clean. On January 9th he got a severe burning pain in the epigastrium, which caused him great suffering, and the vomiting became more frequent. After this, all his symptoms became greatly aggravated, and he finally succumbed on the 24th of January, at 7 a.m.

Post-mortem Examination.—The stomach was firmly adherent to the anterior and posterior walls of the abdomen. The pylorus and posterior surface of the stomach were considerably thickened, densely infiltrated with the cancerous deposit, and in a state of ulceration. Close to the valve there was so much thickening as to almost completely close the orifice; but no trace of the disease having extended to the duodenum

[a] Read before the Carmichael College Medical Science Association, Tuesday, January 24, 1888.

could be discovered. The liver was studded with secondary cancerous nodules, and was the only organ in which such secondary deposits were present.

Among the various quaint and pithy remarks which the late celebrated Dr. Abernethy gets credit for, is one in which he characterises the stomach as being the "father of the human family." Everybody has experienced for himself, I am sure, the epigastric anxiety and unpleasant symptoms which are attendant on any slight derangement of the functions of this organ, a great many of which derangements may be attributed to our present high state of living. In studying the various forms of disease of which the stomach may be the victim, too much prominence cannot be given to the necessity there exists of carefully considering the signs and symptoms which indicate malignant disease, especially as the student has so few opportunities of doing so during his hospital career owing to the scarcity of such cases.

Gastric cancer belongs to that unfortunate class of diseases which alike baffle the skill of both surgeon and physician, and afford them an opportunity in the majority of cases of either confirming or refuting their diagnosis by means of a *post-mortem* examination. Among the various organs of the body which may be the seat of primary cancer the stomach holds a foremost place. Almost every form of the disease may be found there; but there are certain varieties which seem to have a special tendency to invade it. Of these by far the most frequent is scirrhus, which is generally very limited in extent, and attacks the orifices, especially the pylorus, but never infiltrates the duodenum. Encephaloid is seen at the greater curvature, and invariably forms nodular masses in the submucous tissue, whilst colloid, which commences at the fundus, is very prone to spread and envelop the whole organ.

The causes of gastric cancer have been classified under two headings—namely, those of a general predisposing nature and those of local origin. As regards the former, age is the most important, the majority of cases occurring between fifty and seventy. Where an hereditary tendency exists, however, the disease may reveal itself at a much earlier period of life; and, perhaps, it may be interesting to mention in connection with this fact that the earliest case on record occurred in a girl, aged thirteen, in whom, at the *post mortem*, a microscopical examination discovered undoubted evidence of gastric carcinoma. People of good social position are said to be its victims in most instances, which perhaps accounts for the few cases which the student sees in hospital, and also those who are exposed to much mental anxiety, and, as a natural consequence, the male sex. The action of irritants on the stomach, and long-continued pressure on the epigastrium, are the principal local causes which tend to hasten its development.

As might naturally be expected, owing to the hard and indurated

nature of the cancerous deposit, which has its primary seat in the submucous tissue, that part of the stomach which is attacked by it must necessarily undergo certain changes as to its size and shape. Should the pylorus be involved, dilatation and hypertrophy of its walls are the usual consequences; whereas, in cases where the curvatures are implicated, there may be almost complete approximation of the orifices. The cancerous deposit is sometimes so dense and heavy, when situated at the pylorus, as to displace the organ by its own weight, owing to the mass having fallen into the abdominal cavity. When such an occurrence takes place, it is generally very difficult to make a correct diagnosis. In exemplification of this statement I may mention, that a case of this description, which was admitted into the Richmond Hospital not very long ago, led to an error in diagnosis owing to the abnormal position of the tumour, which was only satisfactorily settled as the result of an operation. Unfortunately, gastric cancer has a tendency to form secondary deposits in other organs, and especially in the liver, where it gives rise to "Farre's tubercle."

The symptoms of cancer of the stomach are in most cases of a very misleading character, as, owing to their close resemblance to those of ordinary dyspepsia, the graver disease may be entirely overlooked. There are several points, however, of very great importance, concerning which careful inquiry should be made whenever the disease is suspected. In the first place, early and complete loss of appetite is a symptom of a very suspicious nature, and one which invariably precedes its onset. Pyrosis will also be present, and a careful investigation as to the nature of the fluid will reveal that it had sometimes a sweet and sometimes a bitter taste. The patient often complains of persistent nausea and dyspepsia, with vomiting—the latter symptom being a conspicuous one if the pylorus be involved. There are several things to be noticed regarding the vomited matter. It is what is known as "barmy vomiting," has a blackish colour, and is rather profuse, as the patient throws up more fluid than he has taken. When examined, it will be found to be covered with an organism which has the microscopical appearance of woolpacks, and which, owing to this, has been called sarcinæ ventriculi. Goodsir, who was the first to point out the peculiar nature of this vomit, attached so much importance to it as to consider it a pathognomonic symptom of malignant disease of the stomach.

As the disease progresses the patient suffers from cancerous cachexia, becomes very emaciated, out of all proportion to the amount of food he takes, has a careworn and anxious expression, pinched features, and dry skin of a dirty, earthy hue. If the tongue be examined it will generally be found to be remarkably clean. The pulse and heart are both weak. Gastrectasis is a constant symptom, and one of great annoyance to the patient. Happily, as a rule, pain is conspicuous by its absence, except

in the later stages, when ulceration takes places, and then it assumes a burning character. Melæna and hæmatemesis—the latter in the form of a continuous scanty oozing—is a valuable symptom, as denoting scirrhus in contradistinction to that of gastric ulcer, which is characterised by the blood coming in gushes. When the former variety is present it may be taken as a sure sign that ulceration has commenced.

Much valuable information may be obtained from a physical examination of the abdomen, and to conduct such an examination in a reliable manner is a matter of importance. Before proceeding to do so, however, it may be necessary to administer a purgative in order to empty the bowels, as an impacted colon may easily be mistaken for a tumour. The hands having previously been well warmed, the patient's shoulders supported, and his legs flexed, so as to relax the abdominal muscles, the abdomen may then be gently manipulated. It sometimes happens that the abdomen is greatly retracted, which renders an examination of it a comparatively easy matter, and, in fact, the tumour may even be seen; but, in cases where pressure on the portal vein has caused ascites, its localisation must be a matter of considerable difficulty. In cases of scirrhus of the pylorus a distinct tumour can generally be made out, which, at the beginning, is movable, has a nodulated feel, and is not influenced by respiration. As the diseases progresses, however, it becomes immovable, owing to adhesions, and is generally situated in the right hypochondrium or epigastrium, but may be found, as before mentioned, in almost any part of the abdomen, owing to the displacement of the stomach by the weight of the cancerous deposit.

Apart from the many abnormal positions where a pyloric tumour may appear there is yet another condition which may be present, and the existence of which may lead to a serious error in diagnosis. It sometimes happens in a case of cancer of the pylorus that the tumour will overlap the abdominal aorta, and, consequently, receive a very distinct pulsation from that vessel. In such cases so closely does the tumour resemble an abdominal aneurysm as to have often been mistaken for that condition, and it becomes a matter of paramount importance to be able to distinguish between the two. This can be very effectually accomplished, in most instances, if the following method be resorted to:—The patient should be instructed to get on his hands and knees, when, if a tumour be present, all pulsation will cease, owing to pressure on the aorta having been relaxed, but it will again be apparent on his assuming a vertical or recumbent position.

In the year 1882 a rather extraordinary theory was propagated by Monsieur W. Rommelaere[a] concerning the part which the excretion of urea took in malignant disease of the stomach. He stated that from his own observations on the subject he had come to the conclusion that in gastric

[a] Bulletin de l'Académie de Médecine de Belgique. 1882.

cancer there is a diminution in the amount daily excreted, and that, consequently, an estimation of the daily discharge of urea might prove of service in the differential diagnosis of gastric disease. An explanation of this has been given by stating that cancer, like a true parasite, steals the proteids for its own growth; but difficulties lie in the way of accepting so simple an hypothesis.

The treatment of gastric cancer is a hopeless one, as far as any permanent benefit to the patient is concerned. Once the disease has set in nothing can be done to allay its onspread; so that death, which may take place a year or two from its onset, must be the inevitable result. Surgical operations in the form of pylorectomy or partial gastrectomy have been performed in twenty-seven cases. Of these twenty-three succumbed at varying but short periods after the operation, and none of the fatal cases lived longer than eight days. Some, indeed, proved fatal in a few hours from the direct effect of the surgical procedures. Of the four cases in which the so-called cures were effected, one had a recurrence of the disease at the end of four months, and another was in good health two months after the operation. The German surgeons who performed some of these operations doubtlessly looked upon most of the cases as having "died cured;" but that, it seems, is only another name for a well-performed operation, quite irrespective of any good results to the patient which may or may not follow it.

Although a cure is altogether out of the question in this terrible disease, still a good deal may be done for the patient in relieving some of his most urgent and troublesome symptoms. An endeavour should be made to prevent the tumour from becoming ulcerated; and the most effectual methods at our disposal for doing so consist in giving the patient small, but frequent, meals, such as chicken broth, milk and lime water, whey, sago, yolk of egg beaten up with brandy, custards, and similar articles of diet. If vomiting be very frequent, a teaspoonful of burnt brandy, or a pill containing creasote, are of much service. To prevent the frequent formation of sarcinæ ventriculi, recourse must be had to the hyposulphites, and occasionally leeches and counter-irritation are of service in lessening the surrounding congestion. Hæmorrhage sometimes gives relief, but it may be desirable to check it should it become severe; and this may be accomplished by giving ice, tannic acid, acetate of lead, or a hypodermic injection of ergotin. Pain must be treated with hypodermic injections or suppositories of morphin; and sometimes cold applications over the epigastrium afford great relief.

SANITARY AND METEOROLOGICAL NOTES.

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Vital Statistics

For four Weeks ending Saturday, January 28, 1888.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000:—

Towns	Weeks ending				Towns	Weeks ending			
	Jan. 7.	Jan. 14.	Jan. 21.	Jan. 28.		Jan. 7.	Jan. 14.	Jan. 21.	Jan. 28.
Armagh -	5·2	41·3	10·3	15·5	Limerick -	31·0	39·1	40·5	33·7
Belfast -	37·0	37·9	34·7	29·6	Lisburn -	38·7	33·8	24·2	19·3
Cork -	39·6	42·8	33·1	47·4	Londonderry	28·5	25·0	14·3	21·4
Drogheda	25·4	16·9	25·4	16·9	Lurgan -	30·8	30·8	30·8	30·8
Dublin -	37·5	35·1	31·2	32·6	Newry -	45·7	42·1	42·1	38·6
Dundalk -	30·6	48·0	17·5	8·7	Sligo -	19·2	14·4	72·2	4·8
Galway -	16·8	23·5	16·8	20·2	Waterford -	30·1	16·2	16·2	18·5
Kilkenny	38·1	33·8	25·4	42·3	Wexford -	21·4	29·9	25·7	8·6

In the week ending Saturday, January 7, 1888, the mortality in twenty-eight large English towns, including London (in which the rate was 22·8), was equal to an average annual death-rate of 23·8 per 1,000 persons living. In Glasgow the rate was 27·0; and in Edinburgh it was 30·3.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 35·4 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 6·3 per 1,000, the rates varying from 0·0 in 5 of the districts to 24·6 in Newry—the 13 deaths from all causes registered in that district comprising 7 more from measles, which disease had caused 5 of the deaths registered in the preceding week. Among the 161 deaths from all causes registered in Belfast are 13 from measles (which had caused 17 of the deaths recorded in the preceding week), 8 from whooping cough (a decrease of 5 as compared with the

number from that disease in the preceding week), 1 from diphtheria, 2 from simple continued fever, and 6 from diarrhœa. The 61 deaths in Cork comprise 15 from measles (being an increase of 5 as compared with the number from that disease in the preceding week), 1 from typhus, and 1 from diarrhœa. Among the 23 deaths in Limerick are 3 from measles and 1 from diarrhœa. One of the 13 deaths in Waterford was caused by scarlatina, 2 by typhus, and 2 by whooping-cough. Of the 9 deaths in Kilkenny 2 were caused by measles and 1 by diarrhœa, and the 8 deaths in Lisburn comprise 2 from whooping-cough and 1 from diarrhœa.

In the Dublin Registration District the births registered during the week amounted to 190—98 boys and 92 girls—and the deaths to 261—116 males and 145 females.

The deaths represent an annual rate of mortality of 38·5 in every 1,000 of the estimated population—omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 37·5 per 1,000.

Thirty-seven deaths from zymotic diseases were registered, being 6 in excess of the average for the first week of the last ten years, and 11 over the number for the week ended December 31, 1887. They comprise 2 from measles, 9 from scarlet fever (scarlatina), 9 from whooping-cough, 2 from simple continued and ill-defined fever, 5 from enteric fever, 6 from diarrhœa, &c.

There were but 3 cases of small-pox in hospital on Saturday, 1 patient having been discharged in the course of the week. No cases of the disease have been admitted during the last five weeks.

Twenty-one cases of scarlatina were admitted to hospital, being 3 over the admissions for the preceding week; 23 patients were discharged, 3 died, and 72 remained under treatment on Saturday, being 5 under the number in hospital on Saturday, December 31.

During the week ended December 24, 9 cases of typhus were admitted to hospital; in the following week no cases of the disease were received, but during this week 5 cases were admitted. Only one case of typhoid fever was admitted against 4 for the preceding week. Nineteen cases of typhus and 16 of typhoid fever remained under treatment in hospital on Saturday, January 7.

Seventy-three deaths from diseases of the respiratory system were registered, being 3 over the number for the preceding week, and 12 over the the average for the first week of the last ten years. They comprise 52 from bronchitis and 18 from pneumonia or inflammation of the lungs.

In the week ending Saturday, January 14, the mortality in twenty-eight large English towns, including London (in which the rate was 23·6), was equal to an average annual death-rate of 23·3 per 1,000 persons living. In Glasgow the rate was 25·0; and in Edinburgh it was 25·7.

The average annual death-rate in the sixteen principal town districts of Ireland was 35·4 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 6·7 per 1,000, the rates varying from 0·0 in seven of the districts to 28·1 in Newry—the 12 deaths from all causes registered in that district comprising 8 from measles, which caused 7 of the deaths registered in the preceding week. Among the 165 deaths from all causes registered in Belfast are 11 from measles (which caused 13 of the deaths recorded in the preceding week), 3 from scarlatina, 15 from whooping-cough (an increase of 7 as compared with the number from that disease in the preceding week), 1 from simple continued fever, 3 from enteric fever, and 1 from diarrhœa. The 66 deaths in Cork comprise 24 from measles (being an increase of 9 as compared with the number from that disease in the preceding week), 1 from enteric fever, and 1 from diarrhœa. Among the 29 deaths in Limerick are 4 from measles and 1 from diarrhœa. The 7 deaths in Waterford comprise 1 from scarlatina and 1 from whooping-cough; and the 6 deaths in Lurgan comprise 1 from typhus and 1 from diarrhœa.

In the Dublin Registration District the births registered during the week amounted to 167—93 boys and 74 girls—and the deaths to 242—102 males and 140 females.

The deaths represent an annual rate of mortality of 35·7 in every 1,000 of the estimated population—omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 35·1 per 1,000.

Forty-one deaths from zymotic diseases were registered, being 4 over the number for the preceding week, and 7 over the average for the second week of the last ten years. They comprise 4 from measles, 10 from scarlet fever (scarlatina), 1 from typhus, 7 from whooping-cough, 2 from diphtheria, 4 from enteric fever, 3 from diarrhœa, 1 from dysentery, &c.

One case of small-pox was admitted to hospital; it is the only case of the disease admitted during the last six weeks. Four cases remained under treatment in hospital on Saturday.

Fourteen cases of scarlatina were admitted to hospital, being 7 under the admissions for the preceding week; 12 patients were discharged, 4 died, and 70 remained under treatment on Saturday, being 2 under the number in hospital on Saturday, January 7.

Three cases of typhus, and 6 of enteric fever were admitted, against 5 cases of the former and 1 case of the latter admitted during the first week of the year. Twelve cases of typhus and 18 of enteric fever remained under treatment in hospital on Saturday, January 14.

Sixty deaths from diseases of the respiratory system were registered, being 1 over the average for the corresponding week of the last ten years,

but 13 under the number for the week ended January 7. They comprise 50 from bronchitis and 8 from pneumonia or inflammation of the lungs.

In the week ending Saturday, January 21, the mortality in twenty-eight large English towns, including London (in which the rate was 24·4), was equal to an average annual death-rate of 23·0 per 1,000 persons living. In Glasgow the rate was 23·2; and in Edinburgh it was 23·7.

The annual average death-rate represented by the deaths registered last week in the sixteen principal town districts of Ireland was 31·4 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 4·8 per 1,000, the rates varying from 0·0 in 7 of the districts to 24·6 in Newry—the 12 deaths from all causes registered in that district comprising 7 from measles, which caused 8 of the deaths registered in the preceding week. Among the 151 deaths from all causes registered in Belfast are 9 from measles (which had caused 11 of the deaths recorded in the preceding week), 2 from scarlatina, 7 from whooping-cough (a decrease of 8 as compared with the number from that disease in the preceding week), 4 from enteric fever, and 3 from diarrhœa. The 51 deaths in Cork comprise 10 from measles (being a decrease of 14 as compared with the number from that disease in the preceding week), 1 from diphtheria, and 1 from enteric fever; and the 30 deaths in Limerick comprise 4 more from measles.

In the Dublin Registration District the births registered during the week amounted to 204—83 boys and 121 girls—and the deaths to 216—98 males and 118 females.

The deaths represent an annual rate of mortality of 31·9 in every 1,000 of the estimated population—omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 31·2 per 1,000.

Thirty-seven deaths from zymotic diseases were registered, being 4 over the average for the corresponding week of the last ten years, but 4 under the number for the week ended January 14. They comprise 2 from measles, 7 from scarlet fever (scarlatina), 1 from typhus, 5 from whooping-cough, 3 from diphtheria, 1 from ill-defined fever, 6 from enteric fever, 3 from diarrhœa, 1 from dysentery, 1 from erysipelas, &c.

Four cases of small-pox were admitted to hospital during the week, against 1 admission in the preceding week; 8 cases of the disease remained under treatment in hospital on Saturday, January 21.

Twelve cases of scarlatina were admitted to hospital, being 2 under the admissions for the preceding week, and 9 under the number for the week ended January 7. Eighteen patients were discharged, 1 died, and 63 remained under treatment on Saturday, being 7 under the number in hospital at the close of the preceding week.

Two cases of typhus, and 5 of typhoid fever were admitted, being in each instance 1 under the corresponding number for the preceding week. Ten cases of typhus and 17 of enteric fever remained under treatment in hospital on Saturday, January 21.

Sixty-two deaths from diseases of the respiratory system were registered, being 2 over the number for the preceding week, and 4 over the average for the third week of the last ten years; they compromise 36 from bronchitis and 13 from pneumonia or inflammation of the lungs.

In the week ending Saturday, January 28, the mortality in twenty-eight large English towns, including London (in which the rate was 22·1), was equal to an average annual death-rate of 22·4 per 1,000 persons living. In Glasgow the rate was 23·1; and in Edinburgh it was 22·4.

The average annual death-rate in the sixteen principal town districts of Ireland was 30·9 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 5·2 per 1,000, the rates varying from 0·0 in seven of the districts to 24·6 in Newry—the 11 deaths from all causes registered in that district comprising 7 from measles, being equal to the deaths from that disease in the previous week. Among the 129 deaths from all causes registered in Belfast are 6 from measles (which caused 9 of the deaths recorded in the preceding week), 1 from scarlatina, 6 from whooping-cough, 2 from diphtheria, and 2 from enteric fever. The 73 deaths in Cork comprise 22 more from measles (being an increase of 12 as compared with the number from that disease in the preceding week), and 1 from enteric fever. Among the 10 deaths in Kilkenny are 3 from measles, and the 6 deaths in Galway comprise 1 from simple continued fever, and 1 from diarrhœa.

In the Dublin Registration District the births registered during the week amounted to 219—118 boys and 101 girls—and the deaths to 224—123 males and 101 females.

The deaths represent an annual rate of mortality of 33·1 in every 1,000 of the estimated population—omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 32·6 per 1,000.

Thirty-nine deaths from zymotic diseases were registered, being 2 over the number for the preceding week, and 7 in excess of the average for the fourth week of the last ten years. They comprise 2 from measles, 10 from scarlet fever (scarlatina), 1 from typhus, 8 from whooping-cough, 6 from diphtheria, 1 from ill-defined fever, 2 from enteric fever, 3 from diarrhœa, 3 from erysipelas, &c.

Five cases of small-pox were admitted to hospital during the week, being 1 over the admissions for the preceding week; 2 patients were

discharged, and 11 remained under treatment on Saturday, being 3 over the number in hospital on Saturday, January 21.

Fifteen cases of scarlatina were admitted to hospital, against 12 admissions in the preceding week; 16 patients were discharged, and 62 remained under treatment on Saturday, being 1 under the number in hospital at the close of the preceding week.

Two cases of typhus and 6 of enteric fever were admitted; in the previous week 2 cases of the former and 5 of the latter disease had been admitted. Eleven cases of typhus and 19 of enteric fever remained under treatment in hospital on Saturday, January 28.

The number of deaths from diseases of the respiratory system registered is 49, being a decline of 13 as compared with the number for the preceding week, and 19 under the average for the fourth week of the last ten years; the 49 deaths from these causes comprise 36 from bronchitis and 8 from pneumonia or inflammation of the lungs.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N., Long. 6° 15′ W., for the Month of January, 1888.

Mean Height of Barometer, - - -	30·192 inches.
Maximal Height of Barometer (on 13th, at 9 a.m.)	30·686 „
Minimal Height of Barometer (on 2nd, at 9 a.m.) -	29·183 „
Mean Dry-bulb Temperature, - - -	41·5°.
Mean Wet-bulb Temperature, - - -	39·8°.
Mean Dew-point Temperature - - -	37·6°.
Mean Elastic Force (Tension) of Aqueous Vapour, -	·231 inch.
Mean Humidity, - - - - -	86·7 per cent.
Highest Temperature in Shade (on 9th), - -	58·8°.
Lowest Temperature in Shade (on 29th), - -	25·9°.
Lowest Temperature on Grass (Radiation) (on 29th),	19·4°.
Mean Amount of Cloud, - - - -	63·1 per cent.
Rainfall (on 9 days), - - - -	1·247 inches.
Greatest Daily Rainfall (on 3rd), - -	·350 inch.
General Directions of Wind, - - -	W., S.W., E.

Remarks.

During the greater part of the month the weather was open although changeable in Ireland, colder in England, and very cold in France and Germany. The type of distribution of atmospherical pressure was chiefly anticyclonic in the south, cyclonic in the far north and north-west. A remarkably persistent anticyclone prevailed in Western Europe from the 7th to the 21st. This system first moved slowly northwards from Spain to the south of Scandinavia, and then changed its course, travelling south-

wards again. In front of it very warm westerly winds were found, but as it encroached upon the United Kingdom the air became still, temperature fell, and dense fogs formed. During the first few days heavy southerly gales were experienced in Ireland at a time when intense frost held on the Continent. These gales scarcely extended even as far eastward as England.

In Dublin the mean temperature (42·1°) was perceptibly above the average (41·4°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 41·5°. In the twenty-three years ending with 1887, January was coldest in 1881 (M. T. = 33·2°) and warmest in 1875 (M. T. = 46·6°). In 1867, the M. T. was 35·7°, and in 1865 it was 37·8°. In 1871 and in 1886, the M. T. was 37·9°; in the year 1879 (the cold year) it was 35·3°. As a general rule, January in Dublin is not colder, but rather a shade warmer, than December. This is owing to the full development in January of a winter area of low pressure over the Atlantic to the northwestward of the British Isles and to a resulting prevalence of S.W. winds in their vicinity. January, 1888, proved no exception to this rule.

The mean height of the barometer was 30·192 inches, or as much as 0·311 inch above the average value for January—namely, 29·881 inches. The mercury rose to 30·686 inches at 9 a.m. of the 13th, and fell to 29·183 inches at 9 a.m. of the 2nd. The observed range of atmospherical pressure was, therefore, as much as 1·503 inches—that is, a little over one inch and one-half. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 41·5°, or 2·0° above the value for December, 1887; that calculated by Kaemtz's formula—viz., *min.* + (*max.*—*min.* × ·41) = *Mean Temp.*—from the means of the daily maxima and minima was 41·3°, or 0·5° above the average mean temperature for January, calculated in the same way, in the twenty years, 1865–84, inclusive (40·8°). The arithmetical mean of the maximal and minimal readings was 42·1°, compared with a twenty years' average of 41·4°. On the 9th the thermometer in the screen rose to 58·8°—wind W.S.W.; on the 29th the temperature fell to 25·9°—wind W. The minimum on the grass was 19·4° on the same date. The rainfall was only 1·247 inches, distributed over 9 days. The average rainfall for January in the twenty years, 1865–84, inclusive, was 2·243 inches, and the average number of rainy days was 17·1. The rainfall and the rainy days, therefore, were both greatly below the average. In 1877 the rainfall in January was very large—4·322 inches on 25 days; in 1869 also 4·258 inches fell—on, however, only 18 days. On the other hand, in 1876, only ·406 of an inch was measured on but 9 days; and in 1880, the rainfall was only ·563 of an inch on but 8 days. In January, 1886, 3·244 inches of rain were measured on as many as 26 days, and in 1887 1·816 inches fell on 16 days.

A solar halo was seen on the 1st, and lunar halos appeared on the

22nd, 23rd, and 24th. The atmosphere was foggy on the 9th, 10th, 11th, 12th, 13th, 14th, 19th, 20th, 28th, and 29th. High winds were noted on 12 days, reaching the force of a gale on four days—the 3rd, 4th, 25th and 31st. Hail fell on the 1st and 19th, and snow or sleet on the 1st, 30th, and 31st. Temperature exceeded 50° in the screen on 10 days, compared with 7 days in December, 1887; while it fell to or below 32° in the screen on only 3 days, compared with 7 days in December. The minima on the grass were 32°, or less, on 17 nights, compared with 26 nights in December.

The first week of the new year (ending Saturday, January 7th) witnessed the substitution of warm, damp, squally weather, for the cold, dull conditions which held during the latter part of December. Sunday was very cold, and at night hail, snow, sleet and rain fell abundantly. On Tuesday and Wednesday a strong southerly gale blew on the Irish coasts, accompanied with a heavy rainfall. The last three days were mild and fine. The mean dry bulb temperature was 43·4°, or 3° above the average—the extremes were: highest, 52·5° on Saturday; lowest, 33·6° on Sunday. The mean height of the barometer was 29·653 inches, pressure ranging from 29·183 inches at 9 a.m. of Monday, to 30·254 inches at 9 p.m. of Saturday. Rain fell on three days to the amount of ·899 inch, the maximal fall in 24 hours being ·350 inch on Tuesday.

Throughout the second week (8th–14th) conditions were anticyclonic over nearly the entire of Western Europe. Consequently, quiet, foggy, dull weather prevailed. The fog, which accompanied the anticyclone, was probably unprecedented for its extent, intensity, and persistence. Before it formed on Monday evening a warm S.W. current of air raised the shade temperature to 59° at Mullaghmore, County Sligo, and in Dublin, while from the north-east of England a value as high as 63° was reported. With the onset of the fog, the diurnal range of temperature became very small. Monday was in Dublin bright and warm as September. On Tuesday the sun shone dimly through the fog, but after that day the sky was almost constantly covered with a dense cloud-canopy. The darkness on Friday was phenomenal at times. In Dublin the mean height of the barometer was 30·599 inches, and the range of pressure was only ·266 inch—from 30·420 inches at 9 a.m. of Sunday, to 30·686 inches at 9 a.m. of Friday. The mean dry bulb temperature was 42·8°—extremes being, highest, 58·8° on Monday; lowest, 36·2° on Thursday. Rain fell on Sunday to the amount of only ·010 inch.

During the week ending Saturday, the 21st, dull, cold weather prevailed until Friday, when a considerable rise of temperature occurred as a westerly current displaced the easterly winds which had previously been blowing. At first the air was very searching, but afterwards it was soft and excessively damp. On Tuesday forenoon and Wednesday afternoon the sun shone brightly. Light showers of hail fell on Thursday, and

towards evening a warm rain fell in showers. There was a considerable rainfall (=·102 inch) on Friday night also, subsequently to the clearing of a dense damp fog, which had hung over the city on that day. In Dublin the mean pressure was 30·420 inches, the barometer ranging from 30·588 inches at 9 p.m. of Wednesday, to 29·930 inches at 9 p.m. of Saturday. The mean dry bulb temperature was 40·2°—highest being 53·6° on Saturday; lowest, 32·7° on Thursday. Rain fell on two days to the amount of ·172 inch—the heaviest fall being ·102 inch on Friday.

In the fourth week (22nd–28th) the weather was at first mild and chiefly fine, but afterwards became cold, clear, and dry, and on Saturday a sharp frost occurred—the thermometer falling to 20·0° on the grass, and to 27·4° in the screen. Atmospherical pressure was again much above the average—the mean being 30·219 inches; the highest, 30·464 inches at 11 p.m. of Thursday; the lowest, 29·808 inches at 11 30 p.m. of Wednesday, when a strong westerly gale prevailed. The mean dry bulb temperature was 42·4°, or 2° above the average. The highest reading of the thermometer was 53·6° on Wednesday; the lowest was 27·4° on Saturday. There were light showers on three days, but the only measurable rainfall was ·029 inch on Wednesday. Some smoke fog and haze were noticed on Saturday, on the evening of which day a total eclipse of the moon (magnitude, 1·642 lunar diameters) was seen under most favourable circumstances.

Sunday, the 29th, was the coldest day in the month—the thermometer falling to 25·9° in the screen, and to 19·4° on the grass, and rising in the daytime only to 37·4°. Slight snow and sleet or cold rain fell on the last two days—a severe northerly gale occurring on the 31st, when a well-marked depression travelled southwards across the whole of Great Britain.

At Greystones, Co. Wicklow, the rainfall in January amounted to 3·36 inches, distributed over only 8 days. Of this quantity ·57 inch was measured on the 1st, 1·66 inches on the 3rd, and ·82 inch on the 4th—that is, no less than 3·05 inches on three days.

PORPOISE OIL.

Dr. West, of Wilmington, Del., recommends porpoise oil as a substitute for cod liver oil. It is free from fishy smell and taste, and does not produce nausea, and is credited with being "easily and readily digested and assimilated."—*The Medical Standard*, Chicago, Aug., 1887.

GASEOUS ENEMATA IN PHTHISIS.

The use of gaseous enemata in the treatment of phthisis has been abandoned in Bellevue Hospital, New York, where they were long and persistently tried.—*St. Louis Med. and Surg. Jour.*, Aug., 1887.

PERISCOPE.

THE WILLIAM F. JENKS MEMORIAL PRIZE.

The first triennial prize, of two hundred and fifty dollars, under the deed of trust of Mrs. William F. Jenks, will be awarded to the author of the best essay on "The Diagnosis and Treatment of Extra-uterine Pregnancy." The conditions annexed by the founder of this prize are, that the "prize or award must always be for some subject connected with Obstetrics, or the Diseases of Women, or the Diseases of Children;" and that "the Trustees, under this deed for the time being, can in their discretion publish the successful essay, or any paper written upon any subject for which they may offer a reward, provided the income in their hands may in their judgment be sufficient for that purpose, and the essay or paper be considered by them worthy of publication. If published, the distribution of said essay shall be entirely under the control of said Trustees. In case they do not publish the said essay or paper, it shall be the property of the College of Physicians of Philadelphia." The prize is open for competition to the whole world, but the essay must be the production of a single person. The essay, which must be written in the English language, or if in a foreign language, accompanied by an English translation, should be sent to the College of Physicians of Philadelphia, Pennsylvania, U.S.A., addressed to Ellwood Wilson, M.D., Chairman of the William F. Jenks Prize Committee, before January 1, 1889. Each essay must be distinguished by a motto, and accompanied by a sealed envelope bearing the same motto and containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay. The committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year. The Committee reserves the right to make no award if no essay submitted is considered worthy of the prize.

DER SIEBENTE CONGRESS FÜR INNERE MEDICIN.

The seventh Congress of Practice of Medicine will meet at Wiesbaden, from the 9th to the 12th of April, 1888. Herr Leube, of Würzburg, has accepted the presidency of the Congress. The following subjects will be discussed:—Monday April 9, "Chronic Diseases of the Myocardium and their Treatment." Readers of papers—Herr Oertel, of Munich, and Herr Lichtheim, of Bern. Tuesday, April 10, "Alcohol as a Remedy." Readers of papers—Herr Binz, of Bonn, and Herr von Jaksch, of Graz. Wednesday, April 11, "The Prevention and Treatment of Asiatic Cholera." Readers of papers—Signor Cantani, of

Naples, and Herr August Pfeiffer, of Wiesbaden. The following communications are already announced:—Herr Rumpf, of Bonn, on "Movable Heart;" Herr Unverricht, of Jena, "Experimental Investigations upon the Mechanism of Respiration;" Herr Liebreich, of Berlin, subject reserved; Herr Adamkiewicz, of Cracow, on "Combined Degeneration of the Spinal Cord;" Herr Jaworski, of Cracow, "Experimental Contributions to the Dietetics of Indigestion;" a second paper by the same author, subject reserved; Herr Stiller, of Buda-Pesth, on the "Therapeutics of Morbus Basedowii (Graves's Disease);" a paper by the same author, on the "Diagnosis of Tumours of the Kidneys;" Herr Emil Pfeiffer, of Wiesbaden, the "Excretion and Solution of Uric Acid;" Herr Binswanger, of Jena, on the "Pathogenesis of the Epileptic Seizure;" and Herr Jürgensen, of Tübingen, on "Crypto-genetic Septico-Pyæmia." Drs. Nothnagel, Pagenstecher, Binz, and Curschmann constitute the executive committee of the Congress, of which Dr. Emil Pfeiffer, of Wiesbaden, is the permanent secretary.

STROPHANTHUS.

Professor Langaard gives the following *resumé* of strophanthus, summing up the different statements already published:—(1) All observers speak highly of the beneficial action of the drug upon the heart. The contraction of that organ is stronger and more vigorous, the pulse fuller, more regular, and slower. (2) The different disturbances of respiration, dyspnœa, and asthmatic affections, as also the distress and anxiety of the patient are more relieved by strophanthus than by digitalis. (3) The secretion of urine is often enormously increased, and the œdema disappears. This effect is produced not only in cases of heart disease, but also in morbus Brightii, and, according to Pins, in such a high degree that he believes that strophanthus will, in this disease, entirely supersede digitalis. (4) The unpleasant effects often following the use of digitalis, such as loss of appetite, nausea, and vomiting, which sometimes necessitate its discontinuance, are very rarely observed with strophanthus. (5) The remedy does not possess any cumulative effects. The absence of this property enables physicians to administer it for several weeks without interruption, which is not possible with digitalis without producing toxic effects. (6) The effect is very rapidly produced, but is not so lasting as that of digitalis. (7) Strophanthus is to be preferred before digitalis when a quick effect is desired; and, further, in all cases where great dyspnœa, distress, and anxiety are suffered by the patients, which digitalis does not affect. This remedy is also to be preferred before its rival already named when a sustained stimulation of the mechanical action of the heart is necessary; and then digitalis cannot be given on account of the cumulative action already referred to.—*Pharmaceutische Zeitung*, Nov., 1887.

THE BROMO-IODINE WATERS OF WOODHALL SPA, LINCOLNSHIRE.

Woodhall Spa is situated on the Great Northern Railway of England, about midway between Lincoln and Boston, and can be reached in about four hours from King's Cross Station, London. In the beginning of last year a number of gentlemen purchased the spring, which had been discovered some time previously while certain explorations were being made with the object of finding coal. An entirely new bath-house has been erected, replete with all the most modern improvements, in which the water can be applied either in the form of a simple and complete warm bath, or locally, as a douche or vapour. The modern treatment by *massage* is also carried out in all its details. There are also rooms for the cure by inhalation of diseases of the respiratory tract. The needle, douche, and shower bath are available in suitable cases. The most popular season for taking the Woodhall Spa treatment is from April to November, but as the hotel is heated throughout, there is no reason why the baths should not be taken during the whole year, as experience has proved the efficacy of the water to be as pronounced at one time of the year as at another. Various analyses of the water have been made, the following, by Professor Wanklyn, being the most recent one:—One gallon contains—Chloride of sodium, 1330·00 grains; chloride of calcium, 111·00; chloride of magnesium, 91·20; carbonate of sodium, 10·00; sulphate of sodium, ·30; nitrate of sodium, ·55; free iodine, ·20; iodine (as iodates), ·20; iodine (as iodides), ·40; bromine (as bromides), 3·40; peroxide of iron, traces. From this analysis it will be seen that the water holds in solution a large quantity of chlorides, combined with sodium, calcium, and magnesium, whilst the percentage of bromine and iodine, free and in combination, makes this water richer in these than the celebrated waters of Kissingen, Kreuznach, Krankenheil, Friedrichshall, or Gerolstein. Attention may be called to the small quantity of sulphates present, which is a proof that no organic impurity exists in the water. The somewhat brownish tint which the water presents has been shown by Professor Wanklyn to be due to the presence of free iodine, and it is to this that Woodhall water owes some of its curative value, no other known water having this substance in an uncombined state. The slight brownish deposit which is seen in the bottled water is due to the presence of hydrated peroxide of iron. The new baths and pump room will be opened on Monday, March 19, and Mr. Cyril J. Williams, L.R.C.P. Edin., has been appointed medical superintendent. Accommodation for visitors has been much improved within the last year. Among the many ailments in the treatment of which the Woodhall Spa has proved highly successful, may be mentioned muscular and tendinous, or fibrous, rheumatism, lumbago, sciatica, and brachialgia; the "uric acid diathesis" generally; chronic interstitial nephritis; such cutaneous affections as eczema, psoriasis, prurigo (anal and vulvar), acne; catarrhal affections of the

mucous membranes; syphilis in its later stages; scrofula, especially cases of scrofuloderma, scrofulous diseases of the lymphatic glands, scrofulous disease of the bones, or joints, and those varieties of lupus which have a scrofulous origin; diabetes mellitus; hysteria; and certain cases of metallic poisoning. We have culled the foregoing information from an excellent pamphlet on the Spa from the pen of the medical superintendent. In it will also be found full particulars respecting the internal administration and the external application of the Woodhall water.

PROGRESSIVE SPASTIC ATAXIA (COMBINED FASCICULAR SCLEROSIS) AND THE COMBINED SCLEROSES OF THE SPINAL CORD.

Under this title Dr. C. L. Dana, of New York, contributes a valuable paper, in which he arrives at the following conclusions, founded on a study of cases already published by other writers, and of eight cases which have been observed by himself:—I. (*a*) There is a class of cases suffering from the milder symptoms of locomotor ataxia, such as ataxia, slight pains, paræsthesia, sexual and bladder weakness, and also from symptoms of a spasmodic character, such as tremblings in the limbs, spontaneous movements, muscular stiffness, cramps, and some motor weakness. (*b*) There is also a class of cases in which the symptoms are primarily of a spasmodic character *plus* some paresis, ataxia, slight sensory troubles, and vesical weakness. In these two classes of cases the lower limbs are primarily and chiefly affected. II. These cases form distinct clinical types, which it is important to recognise both for prognosis and treatment. III. The name given cannot yet be based on the pathological anatomy, since combined sclerosis is found in diseases running various courses. The nearest approach to accuracy would be to call it a "combined fascicular sclerosis," this representing the typical class. Clinically the disease may be known as progressive spastic ataxia or ataxic paraplegia. IV. The typical anatomical changes consist of a degeneration of the thin, long fibre-systems of the cord—viz., the pyramidal tracts, the cerebellar tracts, the antero-lateral ascending tracts, and the columns of Goll. Being primary, this does not necessarily involve their whole length, and it is most marked in the dorsal region, where the mixed lateral columns often become involved. The disease is not always primary, but may originate from a dorsal myelitis or a syphilitic cord-disease. It then runs a sharper course. The typical trifascicular lesion has in rare cases produced ataxia with a flaccid paralysis. V. The disease has a long duration. It is less painful than true tabes, and it involves the eyes and the organic centres to a less extent than does tabes dorsalis. VI. It is diagnosticated by the presence of the spastic symptoms in conjunction with ataxia, by mild sensory disturbances, bladder and sexual weakness, by an absence of extensive involvement of

organic centres until very late in its course. It has to be diagnosticated from pure tabes, primary spastic paraplegia, certain forms of chronic hydrocephalus, Friedreich's disease, chronic hydromyelus, and dorsal myelitis. It is especially difficult and important to differentiate it from transverse myelitis, many cases of spastic ataxia having, the author believes, been mistaken for that disease.—*The* (*New York*) *Medical Record*, July 2nd, 1887.

EXAMINATION OF CANDIDATES FOR HER MAJESTY'S INDIAN AND NAVAL MEDICAL SERVICES.

The following questions were set at the February examination in the present year:—*Anatomy and Physiology* (Sir Joseph Fayrer).—1. Describe the formation of the cervical portion of the vertebral column, note the characters of the vertebræ, especially of those which are peculiar, and the mode in which they are connected with each other; describe also the development of a vertebra. 2. Describe the origin, course, and distribution of the ulnar nerve, noting its communications with other nerves in relation especially to the innervation of the hand. 3. Give a description of the dissection by which you would expose the deep perineal fasciæ, the prostate gland and neck of the bladder. Give an account of the parts met with in the dissection. 4. Describe the structure, anatomical relations, and functions of the spleen. 5. Describe the glandular structure by which saliva is formed. Give an account also of the chemical composition and physiological uses of the secretion. *Surgery* (Mr. Pollock).—1. A patient has caries of lower dorsal, or upper lumbar vertebræ, with much suppuration. Describe the symptoms which would indicate the commencement of caries; and, as suppuration continues, in what respect may the symptoms vary, and in what positions may the pus present itself. Describe the treatment to be adopted in the earlier, as also in the later, stages of such a case. 2. What treatment should be adopted in case of suspended animation from immersion in the water? What subsequent symptoms may arise in such a case, after respiration has been completely restored, and what should be the treatment? 3. What are the conditions of urine to which attention should be directed before recourse is had to any surgical operation, except such as is immediately imperative? Relate any instance in which the condition of the secretion, rather than the operation, may have been the cause of death after such operation. 4. Describe the various causes, local and constitutional, which may give rise to inflammation of veins, the evils which such inflammation may effect, and the treatment of these various conditions. 5. Describe the injury known as dislocation of the foot, inwards or outwards from the tibia, the complications which usually attend this injury, and the treatment to be adopted. 6. In what conditions of system does the form of eruption known as Rupia usually commence? Describe it in its first and subsequent stages, and the treatment

to be pursued locally and generally. *Medicine* (Sir W. Aitken).—1. Discuss and explain, from an anatomical and physiological point of view, the phenomena and causation of the paroxysmal suffocative dyspnœa which may occur in cases of thoracic aneurysm, and as bearing on the question of relief by tracheotomy. Say also what may otherwise be done for relief of the dyspnœa, giving reasons for the treatment you suggest. 2. Describe the symptoms and morbid anatomy (macroscopic and microscopic) in cases of multiple sclerosis of the spinal cord. 3. Describe a case of typhus fever during the first ten days, with special reference to the gastric, cutaneous, and nervous phenomena. 4. What meaning do you attach to "compensation" as regards the condition of the heart in cases of disease of its valves? and say how you determine whether or not compensation is sufficient or complete. 5. Describe the anatomical varieties of fibroid tumours of the uterus, the symptoms to which they give rise, and the possible influence they may exert on conception, pregnancy, and parturition. 6. Define (1) "Galvanisation"; (2) "Faradisation"; and indicate the uses to which they are, or may respectively be put in the treatment of disease. *Chemistry* (Dr. Allman).—1. Write down in the form of an equation the chemical changes which take place in the preparation of carbonic acid by the action of hydrochloric acid on marble. 2. By what test may the presence of sulphuric acid be detected? 3. Give the formulæ which express the chemical compositon of each of the following substances:—Sulphuretted Hydrogen, Carbonate of Soda, Epsom Salts, Nitre. *Zoology*—1. Mention one or more instances in which the two germinal layers of the embryo—Ectoderm and endoderm—continue to be recognisable through life as persistent structures. 2. On what erroneously interpreted phenomenon did Ehrenberg base his doctrine of the polygastric structure of the Infusoria? 3. Refer to its proper class and order an animal with the following characters, and give one or more examples:—Respiration exclusively pulmonary, heart with two ventricles incompletely separated, a single occipital condyle, body with a dorsal and ventral bony shield, jaws destitute of teeth. *Botany.*—4. Whence do plants obtain the carbon of their tissues? 5. What are interpetiolar stipules? Cite from the Pharmacopœia a natural order of plants characterised by the possession of interpetiolar stipules. 6. Refer to its natural order a plant with the following characters:—Corolla monopetalous, regular 5-lobed, ovary superior, 1-celled with a free central placenta. Fruit capsular with numerous albuminous seeds. Stamens 5 inserted on the tube of the corolla, each opposite one of its lobes. Plant herbaceous. Adduce one or more examples of this order. *Physics.*—7. Enumerate the colours in the solar spectrum in the order of the refrangibility of the rays, beginning with that in which the rays have the highest index of refraction. 8. What are the conditions under which water may be cooled below 0° centigrade without freezing? 9. What is the numerical coefficient of the expansion of gases?

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XIII.—*Note on Silver-staining (Argyria).*[a] By ARTHUR WYNNE FOOT, M.D., Univ. Dubl.; Senior Physician to the Meath Hospital; Vice-President of the King and Queen's College of Physicians in Ireland; Professor of the Practice of Medicine, Royal College of Surgeons in Ireland; Fellow of the Royal Academy of Medicine in Ireland; Diplomate in State Medicine, Trinity College, Dublin.

IT will be within the knowledge of the members of the Profession that some correspondence has taken place in the medical journals of late[b] on the subject of "discoloration of the skin by nitrate of silver." The gist of this discussion is merely as to the place of entrance of the silver into the body, for that discoloration of the skin was likely to follow the internal use of nitrate of silver has been known to all since the subject was brought before the Medico-Chirurgical Society of London by Dr. I. A. Albers, of Bremen, in a paper read before that body, November 14, 1815,[c] in which Albers reported a case of his own along with three others communicated to him by Dr. Schleiden, of Hamburg.

The point under discussion at present is the occurrence of staining after the local application of nitrate of silver to the throat. On the 22nd of October last Dr. Barclay Baron reported a case of

[a] Read before the Section of Medicine in the Royal Academy of Medicine in Ireland, Friday, December 16, 1887. [For the discussion on this paper see page 172].

[b] Brit. Med. Jour., Oct. 22nd and Nov. 5th, 1887, pages 881 and 992.

[c] Med.-Chirurg. Trans. Vol. VII., p. 284.

discoloration of the skin by nitrate of silver used for swabbing the throat. On November 5th Dr. Wilks wrote that he had met with a similar case in a middle-aged woman who had never taken any nitrate of silver internally, but had been in the habit of applying it to her throat every day for two years. In the same number of the journal Dr. Duffey drew attention to a report of two similar cases given in the *Practitioner* in 1875 (Vol. XIV., p. 462).

It is in reference to this subject that I now offer a note on the occurrence of argyria or silver staining from the long-continued employment of nitrate of silver to the throat. The drawing which I exhibit gives an admirable representation of the violet-gray metallic colour of the patient. The skin of the entire body was discoloured, but that of the uncovered parts, such as the face and hands, was most so. The nails and the mucous membranes of the mouth and eyes were stained. This drawing was made twelve years ago. The man is at present alive and well, and his condition is unchanged, except that he is not quite as dark as he was twelve years ago. At the time the drawing was made (1875) this man had excellent general health, and was about his business as a working jeweller every day. I examined his urine at that time for what is called "argentine albuminuria," and found no evidence of it. On the back of the drawing the notes written at the time were that thirteen or fourteen years previously he was under treatment in the Meath Hospital (under the care of the late Mr. Josiah Smyly) for "lumps in the throat." He had derived so much benefit from the use of solid nitrate of silver, locally applied, that after his discharge he provided himself with sticks of lunar caustic, and continued to apply them diligently for about eight years, when he desisted owing to the alteration in the colour of his skin becoming apparent. His appearance was peculiar and so remarkable that one day in the town of Waterford some children took fright at him and ran away, crying out that he was the devil.

There can be little doubt that in this case much of the nitrate of silver applied to the throat was swallowed, and so the case will come under the category of those who have taken silver nitrate internally for long periods because of chronic affections of the nervous system, such as tabes or epilepsy. Neumann has reported the case of a physician affected with ulcer of the stomach who, for several months, injected two or three times daily into his stomach by means of the œsophageal sound a solution containing about 1·5 gm. of silver nitrate. After about twelve doses the first indi-

cations of the discoloration are said to have appeared. This appears to have been an extremely large dose, equivalent to over 20 grains. It is remarkable that the attempts which have been repeatedly made to produce argyria artificially in animals by long-continued feeding with silver nitrate have hitherto been always attended with negative results as regards the skin.

Microscopic examination of the human skin shows that, while the epithelial portions, the rete mucosum, and the glandular epithelium, are altogether free from depositions of silver, there are throughout the connective tissue portions of the skin accumulations of the finest granules of silver. These deposits of silver are most dense immediately beneath the epidermis in the uppermost layers of the papillary body and in the membranæ propriæ of the sweat-glands. It has been long observed that in these cases of silver-staining blisters rise white as they do in negroes, the dark granules of reduced silver lying chiefly in the cutis.

As to the chemistry of the process, Reimer's views are considered most probable. He assumes that the silver, having been reduced in the intestine, and being in a state of the finest subdivision, is taken up by the chyle-vessels, transported into the blood-current, and then deposited in the various organs. There is a difficulty in reconciling this view with the indisputable fact of the influence of light on the staining of uncovered parts, for the colour of the reduced silver can no longer be altered in any way by the light. Were it found in the tissues as the insoluble chloride the pigmentation would be very intelligible, as the white chloride is very sensitive to light, especially in the presence of organic matter, and it is upon this fact the phenomena of photography depend. *Post-mortem* examinations show that the discoloration is not limited to the skin and superficial mucous membranes, but may extend to the liver, spleen, kidneys, and intestinal mucous membrane. In the internal organs the deposited silver is chiefly in the walls of the smaller arteries. In the kidney the silver particles lie principally in the medullary zone, and give it a dark gray tint. The central nervous system appears to be exempt from depositions of silver granules.[a]

In the present state of our knowledge argyria must be considered an incurable affection. Neumann[b] alone reports that in a case under his observation, according to the statement of the patient,

[a] Von Ziemssen. Handbook of Skin Diseases. P. 455.
[b] Von Ziemssen. Handbook of Skin Diseases. P. 455.

the intensity of the stain decreased in the course of several years. Duhring[a] refers to two cases, reported by Dr. L. P. Yandell in the *American Practitioner* for 1872, where iodide of potassium together with mercurial vapour baths were successfully employed. The patients were syphilitic, and took from ten to sixty-grain doses thrice daily for a period of months. In both cases the fading of the discoloured skin was gradual; in one a faint trace remained, in the other the cure was complete. In the case of which I submit the facts in this paper the course I adopted was to give potassium iodide and sodium hyposulphite in alternate weeks—one week the iodide in ten-grain doses thrice daily, the next week the hyposulphite in twenty-grain doses as often. The object of this process was an attempt to convert the deposited silver into an iodide which is readily soluble in an alkaline hyposulphite, but it is very doubtful whether these changes can be effected in relation to the living body with the safety and certainty they can in the laboratory.

The man considered that his colour improved under this treatment, but as he would attend only as an out-patient, and was often absent in the country for considerable periods, the method did not receive a fair and patient trial.

As the discoloration of the skin after its prolonged use is not the only disadvantage of the silver nitrate, I was glad of late to have come across Curci's[b] researches on the biological action of silver. In his communication thereon he recommends the double hyposulphite of sodium and silver, this salt being soluble, non-irritant, not coagulating albuminoids, and readily absorbable by the subcutaneous connective tissue. It is also very diffusible, and promptly absorbed by the mucous membrane. He claims for it that its action on the nervous system is surely and quickly obtained, and the risk of argyria is avoided. I have had the double hyposulphite made and given it repeatedly in half and three-quarter grain doses subcutaneously, and in half-grain doses by the mouth three times a day. Its taste is sweet, and it should be given fasting or hypodermically. My experience with the double hyposulphite of sodium and silver has been limited, and I am not yet prepared to endorse all that has been said in its favour. Curci recommends that the internal use of the nitrate should be abandoned, since in contact with the mucous membrane it is rapidly altered, and may cause argyria even without its action upon the nervous system having ever been obtained.

[a] P. 375. 3rd edition. 1883.

[b] London Med. Record. 1886. P. 210.

ART. XIV.—*On the Treatment of Sterility and Obstructive Dysmenorrhœa.*[a] By THOMAS MORE MADDEN, M.D., F.R.C.S. Ed.; Obstetric Physician, Mater Misericordiæ Hospital, Dublin; President-Elect, Obstetric Section, British Medical Association; Ex-President, Section of Obstetrics, Royal Academy of Medicine in Ireland; Physician to St. Joseph's Hospital for Sick Children; Formerly Vice-President British Gynæcological Society; and Examiner in Obstetrics and Gynæcology, Queen's University, &c.

THE treatment of sterility and that of obstructive dysmenorrhœa are closely interwoven questions of great practical interest, which, up to the present time, have not been referred to in the Transactions of the Royal Academy of Medicine. Hence, although I have elsewhere considered certain aspects of these subjects, I now desire to submit my views, some of which I believe will be found novel to this Academy, on probably the most frequent, and oftentimes the most difficult, of the daily-recurring problems that come under gynæcological attention.

1. In so doing I would premise that it appears to me in the recognition of obstruction, from either cervical or Fallopian stenosis, as the chief causes of sterility, as well as of dysmenorrhœa, will be found the key to the pathology and successful treatment of the great majority of cases of both these morbid conditions. These, as already observed, being intimately connected in their pathology and treatment, must be here dealt with in conjunction, although with special reference to the former. The frequency of such cases is much greater than is generally admitted, as in my hospital practice, during the past ten years, nearly eleven per cent. of obstructive dysmenorrhœa, or of sterility similarly caused, have come under observation in a total of seven thousand gynæcological cases that have been there noted in our intern and extern departments. Nor is the pathological importance of these complaints less striking than their frequency. Thus, of all the ailments of female existence few give rise to greater and more persistent suffering, or produce more disastrous effects, not only on the general physical health, but also on the cerebro-nervous system, and on the moral constitution of the patient, than does well-marked obstructive dysmenorrhœa. The importance of the last-mentioned consequence of dysmenorrhœa, to which I directed

[a] Read before the Section of Obstetrics in the Royal Academy of Medicine in Ireland, Friday, March 16, 1888.

special attention in an article of mine on the Disorders of the Female Sexual Functions, in "Quain's Dictionary of Medicine," is by no means as generally recognised as it should be. This is more especially evident in many cases of alcoholism, and I may repeat that a morbid craving for alcohol in women may very frequently be dated from their first painful menstrual period, when stimulants are too often forced by foolish mothers into the generally reluctant lips of their daughters. Once, however, the pain of dysmenorrhœa has been thus relieved, the girl at the next epoch of suffering naturally, and no longer unwillingly, seeks similar solace, until finally the victim of dysmenorrhœal alcoholism becomes a habitual, and, perhaps, an incurable drunkard.

2. *Importance of the Study of Sterility.*—The effects of the first of the morbid conditions that form the subject of this communication are certainly of no less moment in a practical aspect than are those results to which I have just referred as consequent on obstructive dysmenorrhœa; inasmuch as the former involves not only the physical health and well-being of our patients, but also, in too many instances, may intimately affect their social interests, and the happiness of conjugal life. In this country, at least, the infamous doctrines of the modern disciples of the Malthusian school of philosophy have fortunately to no appreciable extent displaced the Christian view of the main function and chief end of woman's married life. Hence, here, to the present time, as in Israel in the days of Hannah, to be childless is commonly regarded as a reproach to a married woman, and as a subject of marital disappointment and trouble.

3. *Causes of Barrenness.*—As in every other morbid condition so in the treatment of sterility—our first aim must be to ascertain, and our second to remove, if it be removable, the cause of the trouble for which we are consulted. Of the various causes of barrenness, some, as for instance the absence or arrested development of the organs essential for conception—viz., the uterus, Fallopian tubes, or ovaria—being beyond remedial reach, need not here occupy our consideration. Of these morbid conditions, that known as infantile uterus is the most frequent, and occasionally, though not often, may admit of remedial measures. In the great majority of instances, however, sterility, occurring in women within the limits of ovarian functional vitality, admits of effectual treatment, when that treatment is rationally directed to the special exigencies of each case.

By most authorities on this subject, including even the late Dr. Marion Sims, female sterility, or reproductive inability, has been confounded with impotency, or sexual incapacity. Hence, it may not appear superfluous to remind my hearers that, properly speaking, the latter term should be restricted to those cases in which marital intercourse is prevented by some physical impediment or malformation in the female genital tract—such as vaginal or vulval occlusion, imperforate hymen, vaginismus, &c., by which impregnation may be precluded, whilst sterility or imperfection of conceptive power is due to either some structural lesion, deficiency, displacement, or flexion of some one of the organs essential to conception. Thus, the uterus, Fallopian tubes, or ovaria, may each be absent, misplaced, or otherwise abnormal, or else these parts, being in a normal condition, the patient nevertheless remains sterile, either from constitutional causes or from others—such as sexual irrespondence or incongruity, of a moral rather than of a physical nature.

4. *Stenosis of the Cervical Canal.*—This, according to my experience, now extending over nearly a quarter of a century, in hospital or in private consultation practice, at home and abroad, is not only the most frequent of all the causes of sterility, but is, moreover, the most amenable to appropriate treatment of all the physical factors in the causation of infecundity. Until a recent period, however, neither the frequency nor the rational treatment of this cause of barrenness were recognised by modern surgeons, although both were clearly pointed out by some of the older writers. Thus, it was not until the late Sir James Simpson recalled attention to the plan of dilating the os uteri and cervical canal by a method which, several years previously, had been suggested by another Edinburgh surgeon, whose ignored suggestion on the use of sponge tents in the treatment of dysmenorrhœa Simpson revived, that anything like adequate attention was attracted to this important subject. But both Simpson and Mackintosh were forestalled in their views by ancient writers, whose names had been long forgotten, and whose works had apparently become hermetically sealed by the hand of time. Hence, as I believe that the history of the steps by which modern gynæcological science has arrived at its present development is well worthy of the consideration of all who pride themselves on being members of a learned and liberal profession, I venture, in this connection, to recapitulate, briefly, a few observations which I made, several years since, before a society which no longer exists, on this point.

The credit of suggesting the dilatation of the os uteri and cervical canal by means of sponge tents is, as already said, generally conceded to the late Sir James Simpson, by whom it was claimed, in a paper of his published in the *Edinburgh Journal of Medical Science* for January, 1850, in which he says—"In 1844, in a communication laid before the Medico-Chirurgical Society of Edinburgh, I proposed a means of safely opening up the cavity of the cervix and body of the uterus to such an extent as might enable us to introduce a finger into the uterine cavity for the purpose of diagnosis in the treatment of this (uterine polypi) and other morbid conditions of the organ. The means described consisted in the introduction of sponge tents into the os and cavity of the uterus, so as gradually to dilate these parts to the degree required." This suggestion was then looked on as "marking the commencement of a new era in uterine surgery." It is, therefore, not a little interesting to find that a similar method of dilating the os uteri was well known and described some two centuries and a half ago. Thus, in "The Method of Physic, containing the causes, signs, and cures of inward diseases in man's body from the head to the foot," by Philip Barrough, and "most humbly dedicated by the author to his singular good lord and master, Lord Burghley," the eighth edition of which was published in 1639, the writer, speaking of the treatment of contraction of the cervical canal and os uteri giving rise to mechanical dysmenorrhœa, and producing sterility, &c., in the chapter entitled "Of Straightness of the Matrice," says—"And when the places do seem to be softer to the feeling, then you must put a dry sponge, that hath a cord hanged at it, into the straight place, to the intent to make it wider, which, if it fall out, you must put in another that is thicker. Therefore, you must have many and sundry dry sponges ready." This ancient gynæcologist next refers to the possibility of these sponge tents producing inflammation in the mouth or neck of the matrice, and discusses its treatment, after which he continues—"When the inflammation is ceased, and the place is open, annoint upon a sponge a cerot made of oill of roses and goose grease, and use it untill it be healed, making the place a little sounder; but yet you must alwaies put in sponges untill the end of the cure, lest that the mouth of the womb do gather together againe."

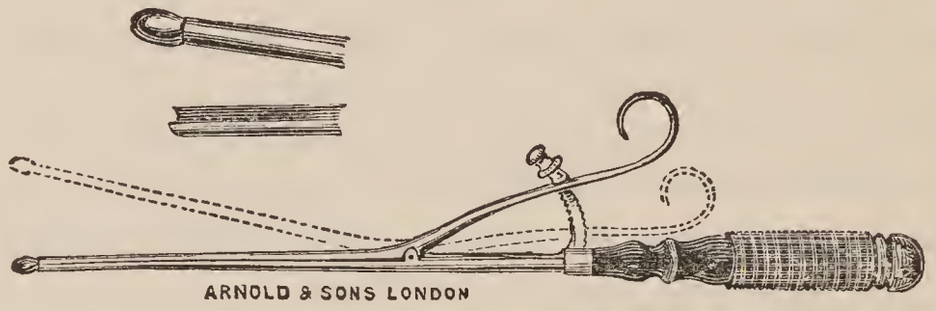
This coincidence does not detract from the merit of Sir James Simpson, to whom suffering humanity, as well as medical science, owes much on other scores, as one of the first modern gynæco-

logists to make a practical application of tents in the treatment of a condition then commonly regarded as beyond the reach of curative treatment. I may, however, take this opportunity of observing that the number of such coincidences between long-forgotten ideas and so-called modern medical discoveries is far greater than could be readily credited by those who share in that illiterate neglect of the lessons to be gathered from the experience of the past, as embodied in the works of the older medical writers, and in that ignorant contempt for their opinions and observations which is, unfortunately, too prevalent at the present day.

5. *Uses of the Author's Cervical Dilator.*—It is not my purpose here to refer in detail to the successive improvements which have since been effected in the methods of carrying out the gradual dilatation of the cervical canal, the most important of which were due to Dr. Sloan, who introduced the use of laminaria tents as a substitute for the old-fashioned and now, happily, generally disused fœtid and inefficient sponge tents; and to Dr. Kidd, who improved on Dr. Sloan's idea by the employment of a number of laminaria bougies to secure a comparatively more rapid and complete expansion. Fortunately, we have now passed beyond the period of gynæcological practice in which these painful, and often hazardous plans of gradual cervical dilatation were the only methods available. No greater improvement has occurred in our branch of surgery than the replacement of these oftentimes unsatisfactory procedures by the more effective means now at our disposal for the rapid expansion of this canal. Of these, perhaps, the best known and most generally employed in this country are either Hegar's or Lawson Tait's dilators. I now desire to call attention to another instrument which I have designed for the same purpose, and which, I venture to hope, may be found by others, as it has been by myself, more satisfactory in its use in the treatment of dysmenorrhœa and sterility occasioned by stenosis.

This instrument will, I believe, be found to supply a want long recognised by gynæcologists—namely, that of a reliable and effective means of securing the rapid and permanent dilatation of the cervical canal in the treatment of stenosis giving rise to the morbid conditions now under consideration. The principles on which it is constructed differ from those of other dilators in several respects, and, above all, in one which I consider most important—viz., in producing expansion of the canal from within outwards—in other words, in imitating the natural process of expansion from

the uterine cavity downwards to the os uteri; whereas most other dilators, such as Hegar's, &c., act in the opposite direction. In my own hands the utility of this instrument, the expansion effected by which may be determined and accurately measured by the affixed index, has been fully tested in a large number of cases of sterility and dysmenorrhœa in hospital and private practice. I may add that my dilator, which does not occupy more room than the ordinary sound when introduced, may also be used with advantage for the dilatation of the female urethra in many cases in which this procedure is indicated. This instrument has been carefully made in accordance with my directions by Messrs. Arnold and Sons, West Smithfield, London.



6. *Operative Treatment of Cervical Stenosis.*—As the method I employ in these cases differs in some respects from that generally adopted, I may be here permitted to refer briefly to its details. I may observe that during the past ten years I have operated on some hundreds of cases of stenosis, and within the last year alone I thus successfully treated in my hospital very close upon a hundred such cases, in many of which I had the assistance of Mr. Duke, Obstetric Physician to Steevens' Hospital.

In the first place, I would advise that this operation should be undertaken about a week after the termination of the last painful menstrual period, and that it should be preceded by daily hot water syringing for some time. To proceed with any comfort to ourselves or advantage to our patient, she should be placed under an anæsthetic—(and I may here observe that for nearly twenty years I have recommended and used a mixture of equal parts of æther, chloroform, and Eau de Cologne, which I regard as the best of all anæsthetics)—and adjusted in the ordinary left lateral semi-prone position, on a proper gynæcological couch or table. Then, the cervix being exposed by the duck-bill speculum, the anterior lip is seized by a strong vulsellum, and drawn down by an assistant as close to the vulva as possible, where it is to be retained. Next the sound should be passed to ascertain the position of the uterus,

as well as the immediate permeability of the canal. Then the metrotome (and I myself much prefer Simpson's original instrument to any of its modifications) should be introduced well into the uterine cavity, and, being expanded to whatever extent may be necessary in each case, should be withdrawn so as to divide the cervix freely in a transverse direction from the os internum to the outer orifice of the passage. It should be again introduced, and the same procedure repeated in an antero-posterior direction. The uterine cavity should now be syringed out with hot water so as to wash away all clots and arrest any hæmorrhage, then I introduce the dilator already described, and, expanding this to its full extent, I allow it to remain for a few moments, and then withdraw the instrument, with blades apart, so as to tear asunder and distend the cut surfaces until I can pass my index into the uterine cavity. In this way any probability of either hæmorrhage or of subsequent re-union of the divided parts is effectually provided against. The uterus is to be again washed out with hot water; and, lastly, I introduce a tampon of Lawton's cotton saturated in glycerine of carbolic acid, which is left *in situ* for some days so as to fill and distend the passage from the uterine cavity to the os externum. The introduction of this may be found by no means an easy matter by the uninitiated, and can best be effected by the employment of the sliding repositor.

After the operation the patient must be kept in bed on low diet, and syringed daily with hot water for eight or ten days, any pain being meanwhile treated by opiates and poultices. After this period a flexible tube or uterine stem pessary is introduced, which should be worn for another month, and then, and not sooner, the patient may resume marital life with a fair probability of subsequent impregnation, and almost absolute certainty of immunity from any recurrence of dysmenorrhœa.

With regard to the results of this operation, my experience has been most satisfactory in the curative treatment of a large proportion of the cases of sterility and obstructive dysmenorrhœa that have come under my observation. This result I ascribe mainly to the thoroughness with which I carry out the dilatation of the contracted passage in the cases referred to. And as I have been reproached by some more timid practitioners with what they regard as the rashness or boldness of my practice in this respect, I may here venture to add that when cautiously, albeit boldly, carried out, in appropriate cases and by expert hands, no ill

results need attend the operation in question, and I myself have had no such reason to regret its performance. In only two cases have I seen any serious hæmorrhage after it. Nor have I found it necessary to plug the vagina in such cases, as I have seen done by some practitioners, to the great discomfort of the patient. In only very few instances have any inflammatory symptoms or cellulitis followed its performance, and in most of these cases the operation had been performed by other gynæcologists previously.

7. *Vaginismus as a cause of Sterility.*—Besides cervical stenosis there are other causes of obstructive sterility which must also be considered in this connection. Of these, perhaps the most frequent and most important is vaginismus. As, however, I have discussed the pathology and treatment of this condition in a previous paper, I need here only briefly refer to those points which bear most directly on the subject of the present communication.

Excessive sensibility of the vaginal orifice and adjacent parts, more especially when associated with such spasmodic contraction of the sphincter vaginæ as to form an impediment to marital intercourse, or dyspareunia, occasionally becomes a matter of considerable gynæcological interest in connection with the treatment of sterility. In such cases the hyperæsthetic condition of the vaginal outlet is evinced even on the slightest attempt at local examination, and is most marked about the meatus urinarius, and in the vicinity of the orifice of the vulvo-vaginal glands and fourchette, whence the hymen, if existent, projects upwards.

With regard to the pathology of vaginismus, there are almost as many divergent views as there have been writers on the subject. For my own part, I think the most rational explanation of these symptoms may generally be found in the hysterical temperament of the majority of those thus affected, although in some cases there is also present an abnormal condition of the pudic nerve, one branch of which runs along with the artery to the clitoris, whilst the other, or superficial perineal nerve, is distributed to the perinæum and labia, in which its terminal branches ratify freely. This fact in the ætiology of the disease is one the practical importance of which will be seen in connection with the treatment of vaginismus.

8. *Treatment of Vaginismus.*—It was long since said by Dr. Marion Sims that there is "no disease capable of producing so much unhappiness to both parties of the marriage contract." I regret to say that in my own experience in some instances I have

found no little difficulty in dealing with extreme cases of this kind by any of the plans of treatment generally recommended. As a rule, in the treatment of such cases, very undue importance is given to local operative measures, whilst the constitutional treatment which is invariably necessary in all instances of well-marked vaginismus is too generally neglected. For whilst excision of the hymen, division of the pudic nerve, destruction of the erythematous and serpiginous patches, dissections out of neuromata, &c., may each be indispensable in certain cases, in quite as many they are unnecessary. And, from my own clinical experience, I can vouch for the possibility in some cases of relieving the most intense dyspareunia resulting from this cause, so as to enable the patient to fulfil all her duties as a wife and eventually as a mother, without any operation beyond the forcible mechanical expansion of the vaginal canal. Before resorting even to this expedient we should, in the first place, employ the sedative treatment, local and general, which is indicated in all other nervous or hysterical disorders, and which, as I believe, is essential in nine-tenths of the cases of vaginismus that come before us, whilst in only one-tenth of them is any surgical or operative measure necessary.

Amongst the topical palliative remedies that may, conjointly with the constitutional nerve sedatives just referred to, be employed in these cases are warm baths and vaginal irrigations, local application of solution of hydrochlorate of cocaïn or of glycerine of carbolic acid, or the introduction of suppositories of cocaïn and belladonna. When such palliative measures have been fairly tried without advantage, we may then resort to mechanical dilatation of the vaginal orifice and stretching of the pudic nerve. For this purpose, having first fully etherised the patient, a large-sized Graily-Hewitt bivalve speculum should be introduced and expanded to its fullest extent. Then a tampon of absorbent lotion large enough to fill the speculum should be soaked in glycerine and passed up to the cervix, its lower end projecting through the external opening of the instrument. This, still fully expanded, should then be forcibly drawn out, leaving the central tampon behind in the vagina. It need hardly be observed that this procedure occasions severe pain. At the same time, however, it as certainly tears through some of the superficial submucous muscular fibres of the affected part, as well as effectually stretches the terminal vaginal branches of the pudic nerve, and thus affords a generally efficient and safe method of overcoming the spasmodic contraction with which we have to deal

in cases of vaginismus. Any subsequent contraction or hæmorrhage that may follow this procedure is sufficiently met by the tampon, which may be retained for at least twenty-four hours; and after some days, should there be still a continuance of vaginismus, the same may be again repeated.

In some cases, however, this method of treatment does not suffice, and we must then resort to either Emmet's or Sims's operation for vaginismus. In some instances I have found the hæmorrhage following these operations sufficiently serious, and in one of these I had to thank Mr. Horne, who was called in in my absence, for his assistance in the arrest of hæmorrhage, occurring some hours after the operation, in the case of a young lady on whom I performed Sims's operation.

It should here be observed that even in cases of vaginismus so extreme as to effectually prevent complete marital intercourse, the disease is not necessarily an absolute barrier to impregnation. In one instance of this kind that came under my observation some years ago, so extreme was the local hyperæsthesia as not only to preclude the probability to complete cohabitation, but also to prevent the patient's submitting to any local treatment for the relief of the morbid condition. Nevertheless conception occurred, and I subsequently was called in to deliver her at full term, and in doing so was obliged to incise the still unruptured hymen, by which delivery was obstructed.

9. *Obstructive Dysmenorrhœa and Sterility from Vaginal Occlusion.*—Amongst the causes of the morbid conditions under consideration some reference must be here made to occlusion of the vaginal passage, whether by congenital malformations, or, as more frequently met with in gynæcological practice, from cicatricial adhesions the result of disease or accident. With regard to the latter, although I have met with them in several instances, fortunately, however, clinical experience of retained menstruation, dyspareunia, and impeded delivery consequent on post-partum adhesions of the vaginal walls is fortunately more limited now than must have been the case in the practice of our professional predecessors, in those good old days when the second stage of labour was allowed to run on until the vital powers were all but completely exhausted, before instrumental assistance was afforded in cases of difficult parturition. Nevertheless, such cases are still occasionally met with.

Of somewhat greater frequency in the causation of this condition in modern practice is the opposite error. In other words, the

integrity of the vaginal canal is now more likely to be injured by the application of the forceps, before the sufficient natural dilatation of the passage, or by the misdirected force or undue haste with which instrumental delivery may be effected by injudicious practitioners.

Another occasional source of cicatricial obstruction or obliteration of the vagina is the abuse of escharotics or instruments intended for the treatment of uterine disease. It may also possibly result from syphilitic disease as well as from phagedænic ulceration or direct injuries to the vulvo-vaginal orifice.

In the first volume of the Transactions of this Academy I have referred to cases of vaginal occlusion, and regret that space prevents my now dwelling further on this subject, as such cases appear to me of much interest, not only from their comparative infrequency, but still more from the possibility of this condition being an occasional cause of menstrual retention and an obstacle to impregnation or parturition. Moreover, they would serve to illustrate the special risk attending the surgical treatment of cicatricial vaginal obstructions. The latter point is one which should never be lost sight of in such cases. It was demonstrated by a distinguished Irish obstetrician, the late Dr. Evory Kennedy, in *The Dublin Quarterly Journal* many years ago, that the treatment of vaginal occlusion is by no means as safe as it is facile. This observation has been corroborated by recent writers, and more especially MM. Bernutz and Goupil, who have shown conclusively the risk of dividing these obstructions or adhesions by any cutting instrument, and the comparative safety of digital separation—the mortality following the use of the knife as compared with the surgeon's finger in such cases being almost as three to one.

10. *Chronic Endo-cervicitis as a Cause of Sterility.*—Lastly, we must here refer to another and much more frequent factor in the causation of obstructive sterility and dysmenorrhœa—namely, what was formerly termed chronic inflammation, and since more properly designated areolar hyperplasia, of the cervix uteri. A brief glance at the pathology of this condition will show its importance in relation to the study of sterility. Suffice it to say that the theory by which this disease was for many years ascribed to idiopathic inflammation, leading to ulceration of the cervix uteri, has been long since abandoned, except by its author, and that it is now as generally regarded as the result of passive congestion, or hyperæmia, commencing in the cervical mucous membrane, the ciliated epithelium

of which is thus primarily tumefied and softened, whilst later on the whole tract of the endo-uterine mucous membrane becomes disintegrated and hypertrophied. After a little time this hyperplasia extends to the subjacent muscular structures of the uterus generally and gives rise therein to those sero-plastic exudations and infiltrations by which the affected parts are at first mechanically distended and thickened. As the disease goes on these plastic exudations becoming organised eventuate in new connective tissue, or true congestive hypertrophy, or areolar hyperplasia of the uterus. At the same time follicular degeneration of the hypertrophied cervical glands occurs, and in their subsequent proliferation in most instances may be found the explanation of the conditions formerly regarded as the result of ulceration of the cervix uteri. The structural differences between the endo-uterine and endo-cervical mucous membrane are also of direct interest in this connection, explaining to some extent the greater proneness of the latter to hyperæmia, and the greater probability of this condition in the former being more immediately communicated to the underlying parenchyma. For whilst the ciliate membrane lining the cavity of the uterus is directly superimposed on the muscular substance, without the intervention of any sub-mucous layer, and has numerous utricular glands, separated merely by prolongations of the uterine muscular fibre, the endo-cervical mucous membrane, on the contrary, rests on a sub-mucous layer, and is arranged in numerous folds branching off on either side from the central ridge, and thus presenting the appearance known as the *arbor-vitæ*. This membrane is lined with ciliated epithelium, and interposed between its folds are countless racemose glands or Nabothian follicles opening between the ridges of the arbor-vitæ, and under diseased conditions pouring out that viscid, white-of-egg-like secretion so generally found blocking the os uteri and cervical canal in gynæcological examinations.

In such cases the functions of the uterus are invariably disturbed. The menses are abnormal; generally they are attended by severe pain; in some instances they are diminished, but more commonly, menorrhagia as well as dysmenorrhœa result from the local congestion and irritation; and in a large proportion of cases of this kind I have observed that the abnormal menstruation recurred every third week, and lasted for six or seven days, whilst in the interval the patient was further weakened by the leucorrhœal discharge already spoken of.

Sterility almost always accompanies this disease, and as long as it exists to any serious extent the patient must remain barren. This fact, which I regard as of great practical importance, is too generally ignored in practice. I have known instances in which patients were subjected to active surgical treatment to overcome a supposed mechanical obstacle to impregnation, and who nevertheless remained childless, no attention having been paid to the existence of chronic uterine congestion, on the subsequent cure of which pregnancy has followed.

11. *Other Utero-ovarian Causes of Sterility.*—Ovarian and tubal inflammation, manifested by soreness, tumefaction, and occasionally burning pain in the ovarian region, is one of the most frequent consequences and accompaniments of uterine hyperæmia. In these cases the disease extends from the uterus, along the Fallopian tubes to the ovaries, and this to a great extent accounts for the fact I have just mentioned, that patients suffering from endometritis or endo-cervicitis, are sterile for the time being.

Were it not that I have already possibly exceeded the prescribed limits of time here allowed to writers of papers, I should have wished to state my experience with regard to the treatment of cases of sterility and obstructive dysmenorrhœa due, as is so often the case, to all the various forms of uterine flexions and displacements, or to Fallopian tubal or ovarian causes, to which latter very great importance should be assigned in this connection, as well as to those just referred to. I must, however, rest content, for the present at least—as I hope to be allowed to return to this important subject on some future occasion—with having, in the foregoing communication, described the method which I have found most successful in a large proportion of the numerous cases of barrenness and painful menstruation which have come under my care in the gynæcological department of my hospital and in private practice during the last few years. Moreover, I have also pointed out more briefly the principles which I believe should guide our treatment in some of the other forms of the complaints alluded to. I trust that the Academy will pardon the unavoidable length of this communication, and by a fair discussion of the views I have now submitted, aid other practitioners in the curative treatment of a class of cases second to none in their importance and frequency.

ART. XV.—*Œsophagotomy.* By J. S. M'ARDLE, F.R.C.S.; Fellow, Royal Academy of Medicine in Ireland; Surgeon and Lecturer on Surgery, St. Vincent's Hospital.

THE following is a case of successful removal of a foreign body from the upper end of the thoracic portion of the œsophagus :—

CASE.—Mrs. J. S., aged forty-eight years, was admitted into St. Vincent's Hospital under my care on December 6th, 1887.

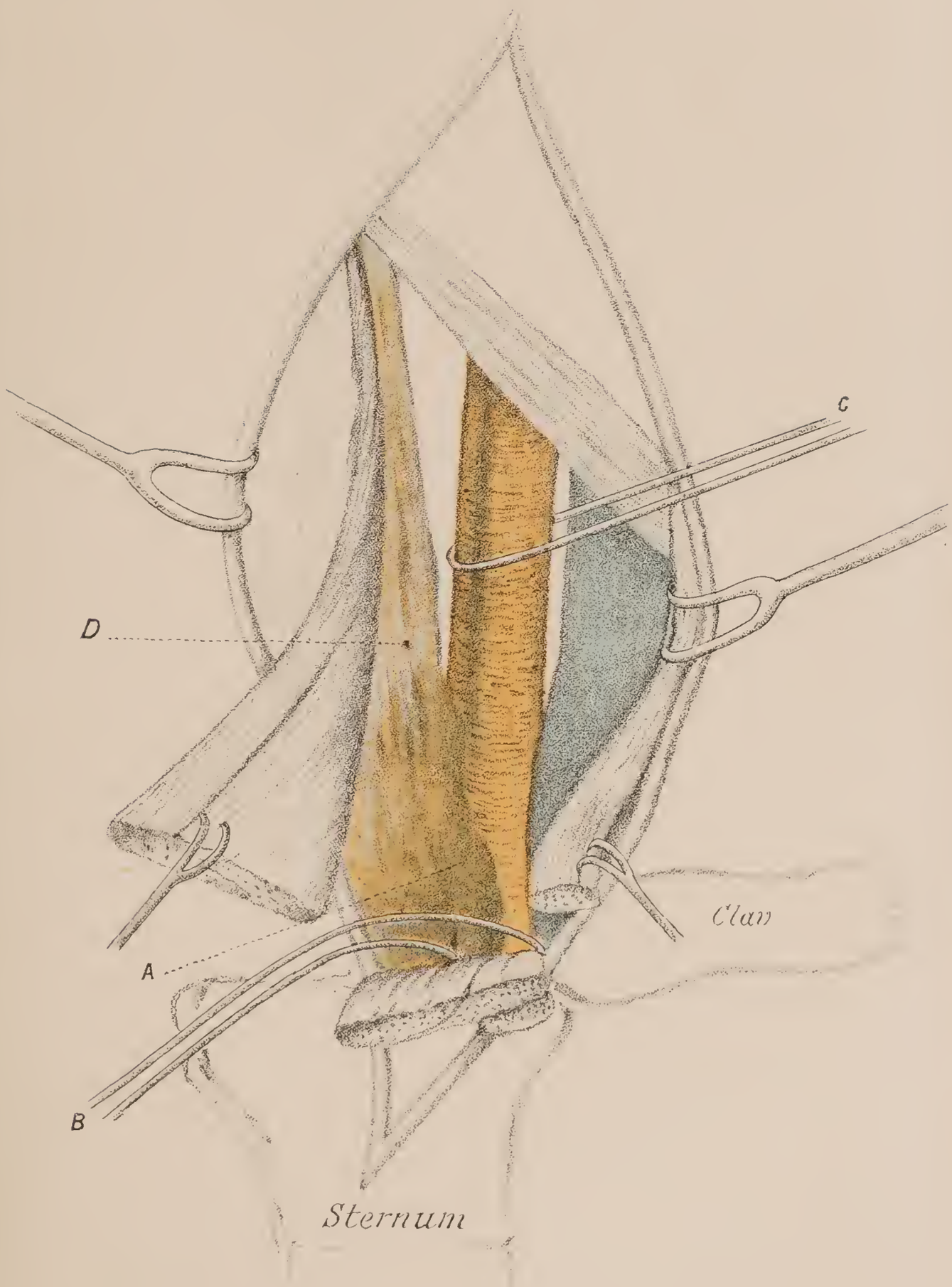
Previous History.—For some ten years before the accident referred to below she had lived almost entirely on sloppy foods, as she had lost her teeth. The result of this was a condition of general debility and anæmia, which became very marked during the past two years. The disimprovement since 1884 she attributes to a severe shock and continued mental trouble.

Present Attack.—Early in November, while (for the first time in ten years) attempting to swallow some roast beef, the first piece only reached the cricoid cartilage, when it occasioned her great uneasiness, and prevented the swallowing even of fluids. She felt as if the piece had become fixed in the right side of her neck. She came at once under the care of two of the best surgeons in the south of Ireland. They attempted removal by the usual appliances. The only change brought about by their efforts was a transference of the body from the right to the left and downwards into the root of the neck. Seeing that all attempts at removal failed, she came to Dublin.

Condition on Admission.—She was pale and emaciated, and had a haggard and anxious expression; pulse, 88, very weak and compressible; temperature, 98°; nervous, respiratory, and urinary systems normal; tongue coated with dry, yellow fur; slight inclination to vomit; breath very fœtid; diarrhœa. She could swallow liquids in small quantity, but every act of deglutition caused pain in the left side of neck at sternal end of right clavicle, and extending downwards behind first piece of sternum. The most painful spot corresponded to the interspace between the heads of the sterno-mastoid. At this point pressure caused a cutting pain, and on pressing deeply down behind the clavicle a rounded mass the size of a small egg could be felt extending outwards to the middle of the sterno-mastoid, and inwards to middle line, in part obliterating the supra-sternal notch. This swelling was very firm, feeling like cartilage, and from its upper rounded border the left carotid passed vertically upwards, greatly enlarged, firm, and cord-like. It was at least once and a half the size of the right carotid. This condition of the vessel was well marked and reached to within half an inch of its bifurcation. There was no murmur over it.

Diagnosis.—Impaction of a foreign body in the œsophagus. It has perforated that tube, and, engaging the sheath of the left carotid, it has set up inflammation of that structure and the artery.

Fig. 1.



Prognosis.—If allowed to remain, the body may perforate the artery. If extracted through the mouth, artery may yield, and fatal hæmorrhage result. Œsophagotomy offers a fair chance of recovery.

I made known the conclusions I had arrived at to the patient and her friends, and they immediately consented to the operation. I gave her six grains of calomel, and kept her for some days on liquid diet and nutrient enemata. She took also a mixture of quinine and sulphuric acid. Under this treatment her pulse improved and there was no longer fœtor from her breath. The pain in neck increased, and fearing the occurrence of erosion of the carotid I determined to examine the patient under ether. This I did on December 10th, four days after admission. With a pliable silver sound I was able to detect a firm body fixed in the left side of the œsophagus at level of sternum, and fearing from its position that any attempt at removal by the mouth might place it beyond my reach or bring on serious, if not fatal, hæmorrhage, I decided on performing external œsophagotomy, which was conducted as follows:—

Without letting the patient from under the influence of ether, her shoulders were raised and supported by a firm pillow, her head drawn backwards and to the right side, I made an incision four inches in length along the inner edge of sterno-mastoid extending one inch downwards over sternum; this allowed free access to the supra-sternal notch, which was partly filled by the swelling. The superficial fascia and platysma were now cut through and the anterior jugular, after double ligature, severed. On cutting the deep fascia passing inwards from the sterno-mastoid, and drawing that muscle outwards with hooked retractors, I found that the vessels could not be drawn with it, after scratching through the fascia surrounding the thyroid lobe, and raising that body towards the middle line, I found the sheath of the vessels firmly fixed to the œsophagus, as at A, Fig. 1. The artery was greatly thickened, and firm fibrinous exudation surrounded the vessel for two inches of its length, nearly half of this being below the upper border of sternum. On passing the finger under the sternal muscles a hard body could be felt in the centre of the exudation at the supra-sternal notch; at this point the union between the gullet and vessels was very firm. Seeing that here the foreign body (after perforating the œsophagus) was making its way into the carotid, and fearing that already that body was partly eroded, I determined on being prepared for any yielding of the vessel which might occur on extracting the body. For this purpose I cut through the sterno-mastoid, hyoid, and thyroid. Reflecting the ends, as in Fig. 1, I obtained a good view of the parts, and passing my left index finger along the carotid, I found that the induration above alluded to extended an inch below the upper end of the sternum. Beyond the level of this thickening I scratched through the fascia in front of the carotid with a director, and passed an aneurysm needle (threaded with strong carbolised silk) round

that vessel; this provisional ligature was drawn through the external wound, as at B, Fig. 1. I now passed a similar ligature, above the point of adhesion, also shown at C, Fig. 1, and all danger of hæmorrhage from the carotid being thus provided against, I passed a curved silver sound into the œsophagus, and cutting on it at the point indicated by D in Fig. 1, made an opening capable of admitting my index finger, on introducing which, I discovered a piece of bone, projecting slightly into the lumen of the tube and fixed in its left wall, as at A, Fig. 2. Passing a curved polypus forceps along my finger, I extracted this, and on making a further examination discovered another piece slightly fixed in the left side of œsophagus, but lying almost lengthwise, as at B, Fig. 2. This I removed in the same way, and on examining the œsophageal wall I found that it had been completely perforated by these bodies behind the first piece of the sternum, as shown in Fig. 2. I now cleansed the wound with a 1 in 80 solution of carbolic acid, passed in a large drainage-tube into its lower angle, plugged with iodoform gauze, and dressed neck with carbolic gauze.

Course and After-treatment.—Immediately after operation she was conveyed to bed, hot jars applied to her feet and sides, and the following enema administered: beef tea, one ounce; the yolk of two eggs, liq. pancreaticus, ʒii.; brandy, ℥ss. and liq. Battley, ♏. xv. During the evening she was inclined to vomit and felt very weak, but complained of no other trouble. At 7 p.m. the dressings were found to be already saturated with serum and mucus; removing them, the wound was washed with a 1 per cent. carbolic solution and re-dressed. The pulse was 80 per minute, very feeble. Temperature 99° F. She was ordered enemata every fourth hour, the opiate in every alternate one.

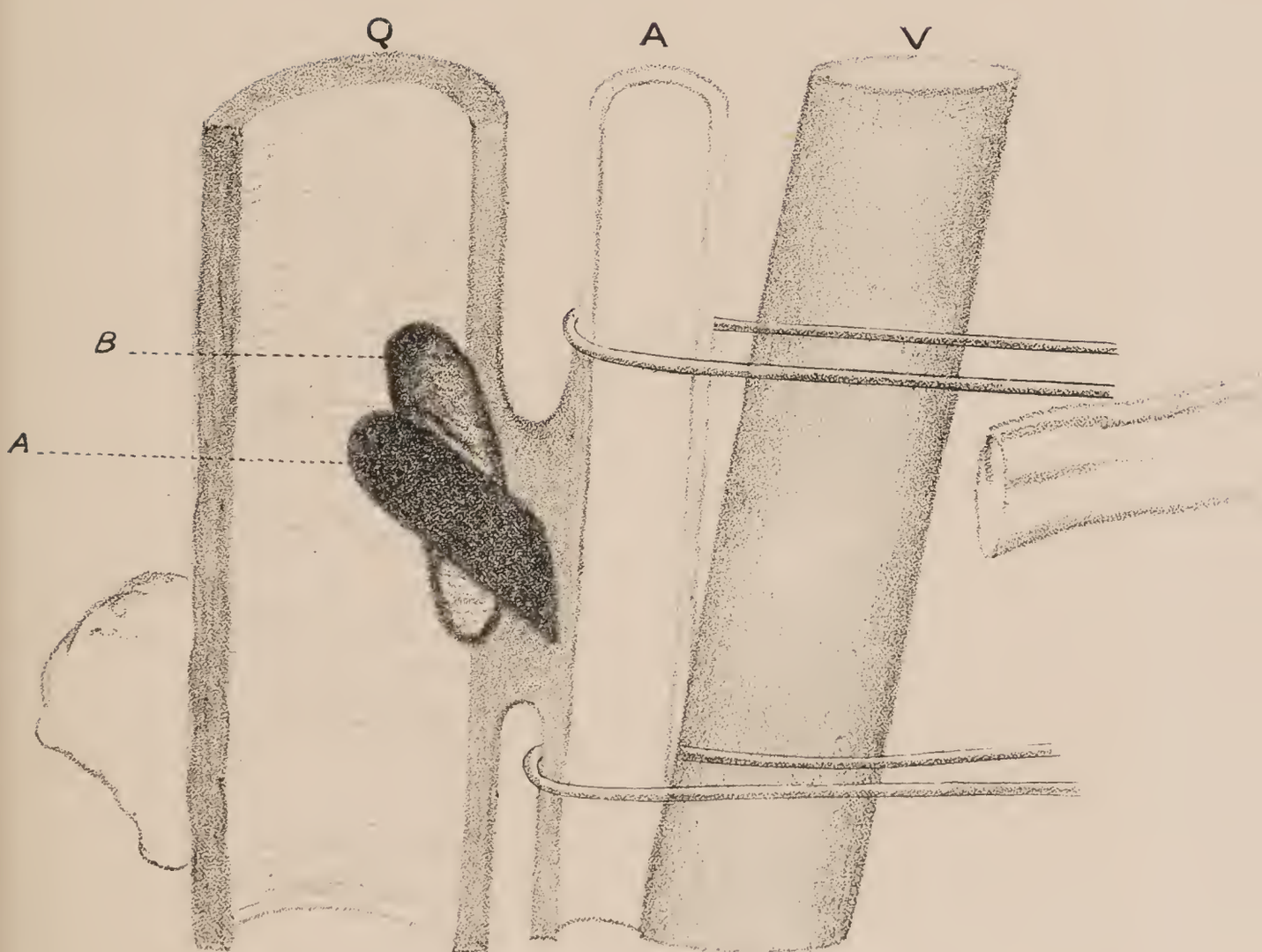
11th.—Stomach still irritable; pulse 108, fairly strong; temp. 99·6°. Complains of soreness of throat, and feels mucus passing through wound, causing uneasiness; re-dressed; enemata continued; allowed small pieces of ice, and to get one minim of tincture of aconite every hour in a little water.

12th.—Slept well; pulse 96; temp. 98·8°. Soreness of throat gone; no tendency to vomit; aconite stopped; ice and enemata continued; one motion from bowels; urine normal in character and amount; wound dressed, and three sutures, which had been applied at upper angle, removed.

13th.—Pulse 92; temp. 98·6°; patient feels much stronger; swallows small pieces of ice readily, but fluids pass through wound and render her uncomfortable by rapidly saturating the dressings; enemata twice daily; one teaspoonful of iced chicken essence every hour.

14th.—Much stronger; pulse 88; temp. 98·6°; no difficulty in swallowing chicken essence; enemata stopped. From this date the patient made an uninterrupted recovery, and notwithstanding the depth of the

Fig. 2.



wound and its extension downwards into the chest, no collection of pus or serum formed, nor did the temperature ever reach 100°. Until union was complete the wound was kept accurately filled with iodoform gauze, each dressing being carried out with extreme care by my friend and pupil, Mr. Garret Hickey, to whose unceasing attention I owe many of the successes of this Session.

My objects in bringing forward this case were—first, to demonstrate the precautionary measures necessary when perforation of the gullet has occurred and the important vessels are implicated; second, to call attention to the fact that small pieces of iced foods could be swallowed readily, while liquids gave trouble, passing in great part through the wound into the dressings.

There can be no doubt of the frequency with which death is brought about by hæmorrhage after the withdrawal of spiculated foreign bodies from the œsophagus. To avoid all danger of this kind in my case, I laid a provisional ligature on the carotid below, and another above the point at which I found the body. Now, although this procedure lengthened the operation somewhat, I was well repaid the trouble, and recompensed for the delay, by the feeling of perfect security with which I carried out the final steps of the operation, knowing that in the event of this foreign body having penetrated the carotid, that vessel was completely under my control. If, in the absence of the provisional ligatures, the removal of the body should be followed by hæmorrhage, ligature of the vessel would be extremely troublesome, if not impossible, in the presence of blood pouring into the œsophagus, and welling up into the wound. It is only when one has had experience of cases of hæmorrhage from the vessels as they leave the thorax, that the great difficulty of dealing with it in a case of this kind becomes apparent. I would, therefore, advise this laying on of provisional ligatures when any perforation of the gullet exists. The question of nourishing the patient after œsophagotomy is of great importance, since most of the fatal cases exhibited marked evidences of inanition. The methods of feeding after this operation are (*a*) by enemata, which rarely afford nourishment enough; (*b*) tube passed through mouth; (*c*) tube through nose; (*d*) tube through œsophageal wound.

Enemata are capable of supporting a patient—1st, when for some time before he solely depends on them, the rectum has become accustomed to their introduction; 2nd, when the condition immediately preceding operation is one of sound health; and 3rd,

when the required repair is of a trivial nature. Now, these conditions are seldom present in cases of œsophagotomy, and hence we cannot often depend on enemata for more than forty-eight hours, however carefully prepared. The use of the tube through the mouth renders the patient very uncomfortable, and is frequently attended with a feeling of pharyngeal and laryngeal distress, which forbids its frequent introduction. When passed through the nose, a soft rubber tube can be used with comparative ease, and after the first twenty-four hours it rarely causes any uneasiness. When, owing to an irritable condition of the nares, or other cause, the tube cannot be used, it may be passed through the wound in the gullet; this, of course, delays the healing, but is often a necessary means of supporting the patient's strength. The method which I adopted of giving small and frequently-repeated amounts of iced chicken essence, when liquids passed through wound, served admirably in the case above noted; and although I do not expect the same treatment to be applicable to every case, I believe the procedure worthy of consideration. There is no doubt on my mind that rectal nourishment would not have been sufficient to support my patient during the healing of a deep-seated and extensive wound such as was here present.

There is another point in the after-treatment of this case I would call attention to—it is the careful plugging of the cervical wound. Every little inequality in the deeper parts of the incision was accurately filled with iodoform gauze, so that serum, mucus, or pus could not accumulate at any spot—the absorbent material rapidly taking up every fluid coming in contact with it from the œsophagus, or the wound surfaces. The dressings here cannot be allowed to remain *in situ* longer than twenty-four hours in the beginning of these cases, since—1st, there is danger of infection from the œsophagus, the wound in which is rarely closed before the eighth day; 2nd, if pus, serum, or mucus is allowed to collect, it tends to pass downwards into the posterior mediastinum, setting up local inflammatory troubles, or giving rise to septic complications. The question of suturing the œsophageal wound is still *sub judice;* there can be no doubt of the advisability of this procedure, when the foreign body is removed, before it has caused ulceration or suppuration, and, as pointed out by Dr. G. Fisher (*Deut. Zeit. für Chir.*, 1887, Heft 6), this is usually the case when the operation is performed within the forty-eight hours succeeding the introduction of the body. The conditions which contra-indicate suture

are—1. Erosions of mucous membrane of gullet; 2. Abscess surrounding the foreign body; 3. Severe inflammation of the pervertebral connective tissue and the walls of the gullet; 4. Perforation of gullet by the body. The passage of a strong silk thread through each lip of the œsophageal wound is useful; these threads are left long, and in case of hæmorrhage from any ulcerated spots on the œsophagus, or in the event of intubation through wound being necessary, they serve as guides to the opening in the gullet, which in their absence is very difficult of recognition. Several cases are recorded in which attempts at introducing a tube led to the production of mediastinal abscess and pyæmia; the tube, missing the gullet wound, passed downwards into thorax, thus leaving a channel which it was found impossible to drain. All the cases in which this occurred ended fatally.

For some weeks after operation in the above case there was almost complete aphonia. This, as I explained, was not due to section of the left laryngeal, but to engagement of that nerve in the indurated material surrounding the foreign bodies. A small blister applied above the sternal end of clavicle cured the aphonia and relieved some deep-seated pain which was felt extending from that point down the left arm and upwards along the neck.

The patient is now perfectly well; aphonia quite gone. She swallows without the slightest difficulty—the wound in the neck is firmly healed.

HORNY GROWTH OF PENIS.

Dr. J. H. Brinton records (*Medical News*, Phil., August 6, 1887) the case of a farmer, aged sixty-two, from whom he excised a horny growth which had existed for more than four years, and which had originally grown from a wart. It grew from the base of the glans, at the coronal border, and was firmly attached both to the glans and to the prepuce:—"The horn was one and seven-eighths inches long, one and three-eighths in circumference at its base, and curved forward, tapering slightly, beyond the extremity of the glans. On the dorsum, half an inch in front of the corona, a plate of horny tissue, varying in width from three-quarters of an inch to an inch, encircled the end of the glans, covering and destroying the foramen and its attachment, surrounding the meatus and narrowing it to a pin's point. Through this narrowed opening, impervious to any instrument, the urine escaped slowly, drop by drop."

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Pulmonary Consumption: its Etiology, Pathology, and Treatment. By C. J. B. Williams, M.D., LL.D., F.R.S., and Charles Theodore Williams, M.A., M.D. Oxon. Second Edition, Enlarged and Re-written by Dr. C. Theodore Williams. London: Longmans, Green, & Co. 1887. 8vo. Pp. 446.

For very many years the name of Dr. C. J. B. Williams has been associated with the topic of pulmonary consumption. The father's mantle has fallen upon the son, and in the volume before us the ripe experience gained by two generations of skilled observers of that dread disease is embodied in singularly clear and terse language.

In the first edition of this work, which appeared several years ago, Dr. C. J. B. Williams proved, by a careful analysis of the extensive records of cases in his practice, that the duration of pulmonary consumption had quadrupled as a result of the hygienic, medicinal, and climatic treatment of the disease. Dr. Williams, sen., also endeavoured to show "that many of the phenomena of phthisis were due to a decline or deficiency in the vitality of the bioplasm, causing inflammatory or other processes to result in short-lived productions, and that much might be done by appropriate treatment to correct this tendency, and to raise the standard of tissue formation." The tubercle-bacillus had not been discovered by Koch when Dr. Williams expressed the opinion that among the agents of causation of phthisis were, "septic influences, which tend to blight or corrupt portions of the bioplasm of the blood or of the lymphatics, and thus sow the seeds of decay." His son points out that Koch's bacillus "may truly be called the septic element of consumption, though others may exist, and it may be said to exercise a powerfully corrupting influence on the blood and lymph of the body, after the first infective centre has been established."

This last quotation affords the key-note of the second edition, the objects of which are, in the words of the preface—"(1) To survey the experimental and other evidence on which the causation

of tuberculosis by the tubercle-bacillus rests, and to determine how much of the pathology and clinical history of consumption is due to this organism and its action, primary and secondary, on the tissues, and how much to other agencies; (2) to consider, in addition to the ordinary type of consumption, the varieties of the disease, and to treat in some detail of the principal complications; (3) to review the present treatment of consumption in its various aspects."

To carry out these objects Dr. C. Theodore Williams has found it necessary to re-write the pathological portion, and, in fact, the greater part of the work. Fourteen new chapters have been incorporated, and the chapter on "Climate" has been re-written, and now includes an account of the remarkable curative effects of high altitudes on consumption. Chapters I. and IX. practically remain as they were originally written by Dr. C. J. B. Williams. The first includes a definition of phthisis; the latter presents an outline of the physical signs of the varieties and stages of the disease.

The definition of consumption given by Dr. Williams appears to us faulty, inasmuch as it ignores the zymotic or constitutional origin of the disease, which it represents as a local malady in the first instance, at all events.

"PULMONARY CONSUMPTION," writes the author, "is characterised by the symptoms: persistent cough, expectoration of opaque matter, sometimes of blood; a progressive loss of flesh, breath, and strength; often hectic fever, night-sweats, and diarrhœa; and the common tendency of the disease is to a wasting of the body and a decline of its power, down to its termination in death.

"Pathologically considered, pulmonary consumption is characterised by certain changes in the textures of the lungs, consisting chiefly of consolidations, granular or diffused, which irritate their functions and clog their structures, and which proceed to further changes, of degeneration, disintegration, and excavation of some parts, and of induration and contraction of others—all tending to a disorganisation of the lungs, and a wasting away of the flesh and blood of the body." (Page 1.)

The faultiness of this definition in the direction we have pointed out is corrected, at the end of the chapter which contains it, in the following sentence:—

"The great discovery of the *Bacillus tuberculosis* by Koch, and the detection of its presence in all forms of scrofulous and tubercular lesions, has demonstrated conclusively the unity, if not the uniformity, of consumption; and while admitting considerable varieties in the disease, we

may fairly explain them by differences either in the amount of the poison introduced into the system, or in the strength of the constitution to resist the attack, which in the feeble may amount to a general spread, or in the strong may be limited to the invasion of a part of one organ; or again, by differences in the predisposing cause and its action in weakening the system, and thus rendering it liable to tubercular attack." (Page 5.)

Chapters II. to VII. inclusive are amongst the most interesting in the work. They deal with the morbid anatomy of pulmonary consumption, the histology of the disease, the *Bacillus tuberculosis*, and the pathology and ætiology of consumption.

The principal pathological elements found in the lungs of those dead of phthisis are shown to be—(1) grey and dark granulations, or miliary tubercles; (2) white granulations; (3) yellow granulations, or yellow tubercles (by far the commonest form); (4) caseous masses, or yellow infiltration; (5) grey infiltration, or catarrhal pneumonia (the "gelatinous infiltration" of Laennec); (6) red hepatisation, the result of croupous pneumonia; (7) fibrosis, which is the great element of the contractile or cicatricial process; (8) cretaceous masses, which are found particularly in the bronchial glands in chronic cases; (9) fibrinous nodules, or "blood-residues," noticed in cases where severe hæmoptysis has occurred; and (10) vesicular emphysema of the vicarious variety.

The histological elements of phthisis are four, namely:—(1) Exudation of fibrin and leucocytes into the pulmonary alveoli—resembling the morbid processes of both croupous and catarrhal pneumonia; (2) an accumulation of epithelial cells within the alveoli—either ordinary epithelial cells, lining the alveoli, or epithelioid cells or giant cells; (3) a thickening of the alveolar wall by a small-celled lymphoid, or "adenoid," tissue, consisting of minute cells not exceeding a leucocyte in size, separated from each other by a very delicate reticulum, the existence of which is denied by Cornil and Ranvier; and (4) an increase in the interlobular connective tissue (cirrhosis), which, however, is not necessarily associated with consumption. In addition to the foregoing, changes are met with also in the bronchial tubes, the pleuræ, and the bronchial glands.

Chapters IV. and V. are devoted to the *Bacillus tuberculosis*, including the history of its discovery; the different methods of staining it; its detection in tubercular and scrofulous lesions, in lupus, in the milk of tubercular cows, and in the air of hospitals; its relation to miliary tuberculosis, caseation, and fibrosis; and the

four channels of bacillar infection. These last are—(1) by continuity, the bacilli passing through the alveolar wall, having first destroyed the epithelium; (2) by re-inhalation of bacilli-laden sputum, by which fresh sets of alveoli are infected; (3) through the lymphatics, which is probably the way in which the pleura becomes involved; and (4) through the arteries and veins. At pages 40 and 41 a very graphic description is given of the bacillar attack upon the lungs, as observed by Veragut, at Zürich, in 1883.

In Chapter VI., on the "Pathology of Consumption," the ætiological part played by the Bacillus tuberculosis is explained. The authors observe:—

> "We must now regard many of the histological elements of phthisis, on which stress was formerly laid, not as essential factors of the disease, but simply as results of the irritation to the tissues, caused by the presence of the bacillus, their number and variety depending on the rapidity of the onset and the length of time permitted to nature to organise defences against the invader." (Page 47.)

In the same chapter it is shown how the opposite lung in a case of phthisis may become infected by re-inhalation of sputum, and also how a case of chronic phthisis may be converted into one of acute general tuberculosis, infection of the whole system being brought about by the penetration of the bacilli into the pulmonary vessels. On the subject of pulmonary excavation the authors draw largely from Dr. William Ewart's excellent "Gulstonian Lectures," delivered in 1882.

In Chapter VII. the predisposing causes of consumption are very fully considered—especially family predisposition and infection. We would refer our readers to the admirable summary of conclusions on this subject on pages 76 and 88 respectively. As to the *rôle* played by syphilis in the causation of the disease, Dr. C. Theodore Williams is inclined to agree with Lancereaux and Fournier that it acts as a depressing constitutional cause and predisposes most powerfully to the bacillar attack. He has always held that one of the best methods of diagnosticating syphilitic disease of the lungs, with the presence of gummata and specific ulcers, from pulmonary phthisis was by treatment. We can, from our own experience in practice, bear him out in his statement that "when a case of pulmonary syphilis is submitted to specific treatment by mercurial baths or iodide of potassium, the effect is often magical, cough and expectoration diminish, consolidations of

long standing clear up rapidly, and the greater portion of the symptoms vanish." (Page 83.)

The eighth chapter contains a sketch of the clinical history of consumption, and concludes with an enumeration of the several ways in which death ensues. These are—by apnœa, from the patient's inability to expectorate the accumulating secretion; by thrombosis (? embolism) of the pulmonary artery, inducing lividity and dyspnœa; by pneumothorax; by asthenia or collapse, the heart's action gradually failing—the patient being utterly exhausted, either by the wasting course of the disease or by the attendant diarrhœa. Hæmoptysis also may cause death, either by inducing collapse from loss of blood, or by suffocation through the blood rapidly filling the air cells.

Dr. C. J. B. Williams is responsible for the outline of the physical signs of the varieties and different stages of the disease in Chapter IX. He speaks of "crepitus," "click," and "croak," as modifications of the signs which indicate the advance of tubercles to caseation, and he questions the value of wavy or jerking inspiration and the subclavian murmur of Stokes as early signs of phthisis. The former, he says, "is nothing more than the respiratory sound modified or divided by the successive pulsations of the heart. These, on the left side especially, slightly impede the passage of air in part of the lung, and thus give its sound a jerking or interrupted character." He admits that "the presence of tubercles in the lungs increases this effect by transmitting the heart's pressure further, and by narrowing the area of the passing air." Dr. Williams very accurately points out the frequency with which this wavy breathing may be heard in females with a narrow chest and a palpitating heart, but who show no evidence whatever of pulmonary disease. The subclavian arterial murmur of Stokes, caused by pressure of the apex of the lung on the artery, occurs in some subjects without any disease of the lung. Hence its presence should not be relied on as a sign of incipient phthisis.

At page 105, when speaking of the symptoms which mark the last stage of decay in consumption, Dr. Williams observes that "they indicate not only rapid degeneration and waste, but often corruption and decomposition, in which septic parasites, vibrios, bacteria, and aphthous fungi lend their destructive aid." He adds, epigrammatically: "Thus *φθίσις* passes into *φθορά*."

Towards the close of this chapter (IX.), Dr. Williams uses the term "subcrepitation" in a sense which is new to us. He says:—

"Small degrees of it (*i.e.*, crepitus) (subcrepitation) being heard in parts previously quite obstructed."

Chapter X., on the clinical aspects of tubercle bacillus, is most suggestive. The bacillus is shown to be scanty in the first stage of pulmonary phthisis, although its presence may precede all physical signs. It is abundantly present in the stage of softening and excavation, when it may infect other portions of lungs through re-inhalation of the sputum. The bearing of the presence of the bacillus on diagnosis and on prognosis is also discussed in this chapter.

The next topic considered is the relation of hæmoptysis to phthisis (Chapter XI.) The author criticises Niemeyer's views on bronchial hæmorrhage with considerable force and point, and then states his own and his father's views on hæmoptysis, founded on the experience of many thousand cases. Setting aside mere streaks or tinges in the expectoration, such as are seen in pneumonia and bronchitis, blood-spitting may arise from (1) alterations in the blood, as in scurvy, purpura, or hæmophilia; (2) congestions of the lungs through cold or alcoholism; (3) cancer or hydatids of the lungs; (4) disease of the heart and great vessels, especially aortic aneurysm; (5) over-strain of the heart, causing pulmonary congestion; (6) embolism and thrombosis of the pulmonary vessels; (7) diseases of menstruation; (8) injuries to the thorax and lungs; and (9) bronchiectasis. If we except these causes, "we may lay down as a law that hæmoptysis exceeding one ounce in amount is due to changes in the pulmonary blood-vessels connected with phthisis." (Page 136.) These changes are—first, fatty degeneration in the small vessels, as demonstrated by Dr. Radcliffe Hall; secondly, ulceration and erosion of the pulmonary vessels from tuberculous infiltration; and, thirdly, aneurysm of the branches of the pulmonary artery, as pointed out in particular by the late Dr. Vald Rasmussen (not "Rasmüssen") of Copenhagen.

The temperature of consumption is shown, in the twelfth chapter, to be controlled by two agencies—first, excessive action of the processes of oxidation and disintegration, combined with a weakening of the inhibitory action of the nervous system in these phenomena, resulting in pyrexia; and, secondly, a collapse of the constitutional powers, producing subnormal temperatures. The author has failed to confirm most of M. Peter's conclusions as to local elevations of temperature over the seat of active tuberculisation. He has, further, arrived at conclusions which are in direct opposition to

Niemeyer's views as to the correlation between loss of weight and high temperature in phthisical patients. Thus, he finds that pyrexia is not incompatible with gain of weight, provided the appetite is good—a result also observed by Dr. Sidney Ringer, who remarks that "patients with a very considerable elevation of temperature, but who enjoy a good appetite, do not lose flesh, provided always they are not employed in any active pursuit which entails much waste of tissue."

In chapter XIII. the diarrhœa of consumption is discussed. Three different kinds of diarrhœa are met with during the course of the disease. The first form arises from indigestion in the earlier stages of phthisis; the second from intestinal ulceration, a fatal form, and one which prevails in a considerable proportion of third stage patients. The third variety arises from lardaceous disease of the intestine, and corresponds with the "colliquative diarrhœa" of M. Peter and other French authors. It prevails in the late stages of the disease, is not profuse, but persists, and seems to be correlated with the drenching night-sweats of these stages. The appearance of diarrhœa in phthisis is always to be regarded with suspicion.

Chapter XIV. contains a little treatise or monograph on "Pneumothorax and Pyo-pneumothorax" both phthisical and non-phthisical. The ætiology of pneumothorax may be summed up thus — (1) emphysema, (2) pulmonary abscess or gangrene, (3) wounds of the thorax, (4) bursting of an empyema through the lung into a bronchus, (5) perforation of a tubercular cavity into a non-adherent pleura. As regards prognosis, a series of cases cited by Dr. C. Theodore Williams show that among the upper classes, at any rate, life may be prolonged for many years, even in tubercular pneumothorax, and that in some cases complete recovery may take place. The prognosis depends on the extent of the pneumothorax and the amount of disease in the other lung. Pneumothorax arising from causes other than phthisical excavation and perforation has a *most hopeful* prognosis.

The "Albuminuria of Consumption" is the subject of the fifteenth chapter. "This symptom," the author rightly observes, "must, in all cases of phthisis, be regarded as of very serious import." The supervention of albuminuria in consumption is far from rare, and Dr. Williams includes in the second of two interesting tables the facts relating to the condition of the urine and the morbid anatomy of the kidneys in twelve necropsies among sixteen phthisical patients with albuminuria.

"The kidneys in seven of these twelve cases were undoubtedly lardaceous; in three more instances they were described as either large white kidney, or mottled kidney, or chronic nephritis, and it is not improbable that all these cases might, after more careful examination, have been classed as lardaceous. In the remaining two cases, the kidneys were, in one, in a state of interstitial nephritis, and in the other, they were granular with some tubal inflammation."

Lardaceous disease, therefore, seems to be by far the most common form of renal degeneration in pulmonary consumption.

Chapters XVI. to XX., inclusive, are taken up with a description of the principal varieties of phthisis, beginning with the acute forms and ending with the more chronic ones, which are therefore more amenable to treatment. The classification adopted is as follows:—

1. Acute tuberculosis, or what we would, perhaps, term "tubercular fever."
2. Acute tuberculo-pneumonic phthisis.
3. Acute phthisis, or "scrofulous pneumonia."
4. Scrofulous phthisis, which is "strongly hereditary."
5 Catarrhal phthisis.
6. Fibroid phthisis.
7. Laryngeal phthisis.
8. Chronic tubercular phthisis.

It is "the omnipresence of tubercle in the system" which gives to the first form, which we have ventured to call "tubercular fever," its characteristic features. This terrible disease, in which the prognosis is generally hopeless, is mistaken often for typhoid fever, and sometimes for capillary bronchitis. It contrasts with "acute phthisis" in the dyspnœa, the absence of expectoration, the physical signs, the lesser tendency to breaking down of the pulmonary lesion, and the infection of other organs, such as the meninges of the brain, and the peritoneum.

The second acute variety may be described as a link between acute tuberculosis and scrofulous pneumonia. A pneumonic process is present in it, and excavation soon follows upon consolidation.

The features of the third form, or "acute phthisis" (scrofulous pneumonia), are thus summed up on page 254:—

"1. The intensity of the pyrexia and rapid emaciation.

"2. The acuteness of the disorganising processes, due probably to the swarms of tubercle bacilli present. Excavation quickly following consolidation.

"3. The large part played by inflammation and the rarity of miliary tubercle.

"4. The absence of fibrosis.

"5. The occurrence of pneumothorax owing to two causes: (1) the size of the cavities formed, and (2) the absence of pleural adhesions.

"6. The tendency of the disease to localise itself in the lungs, and the freedom of other organs, such as the intestines and the serous membranes, from secondary infection."

Scrofulous phthisis is that form of pulmonary consumption which is preceded by, or accompanies, scrofulous affections of various joints, caries of the sternum, ribs, and vertebræ, or lumbar and psoas abscesses, otorrhœa, fistula in ano, or—as is most common—enlarged and caseating glands, cervical, bronchial, axillary, and mesenteric. "Scrofulous phthisis" is "strongly hereditary," prevails chiefly among children under fifteen, and runs a slow course. The prognosis, while uncertain, is not unfavourable in many cases.

The term "catarrhal phthisis" Dr. Williams applies to "a class of cases which apparently commence in catarrh of the bronchi induced by cold or damp, creeping down into the alveoli, and thus originating catarrhal pneumonia, followed later—through bacillar invasion—by implication of the alveolar wall." (Page 266.)

"Fibroid phthisis" includes those cases in which "fibrosis" is the main feature. There are two principal modes of origin of fibrosis: firstly, from attacks of pleurisy and pleuro-pneumonia or interstitial pneumonia; secondly, from chronic pneumonia resulting from long continued irritation of the lungs, through the inhalation of various kinds of dust and dirt, such as prevail among fork and knife grinders, colliers, and button-makers. In this group tubercle-bacilli can be detected in the sputum.

"Laryngeal phthisis" is that form "in which, in addition to the pulmonary lesions, the larynx is the seat of tubercular attack and undergoes infiltration of its tissues with inflammatory exudations, such changes being set up by the tubercle bacilli. The larynx becomes the seat of extensive ulceration, the lesions found in the lungs being simply those of acute or chronic tubercular phthisis." The prognosis of laryngeal phthisis is most unfavourable—death taking place from exhaustion, or from apnœa, or from both; or again, from inanition, through the great dysphagia.

The last variety of consumption described by Dr. Williams is "chronic tubercular phthisis," which "is too well known to require

a minute description." In it the prognosis is hopeful, more particularly so since the mountain climate treatment of the disease was introduced. Several striking cases of this form of consumption are given, including examples of arrest of the disease in its various stages, especially by climatic treatment.

A long chapter (XXI.) follows on the duration of pulmonary consumption. It is an abstract of a paper, which appeared in Volume LIV. of the *Medico-Chirurgical Transactions*, in the year 1871. We need hardly say that the subject is one of great interest, and we may add that it is done full justice to.

The terminal portion of the work, including Chapters XXII. to XXVI., is devoted to treatment, under the headings prophylactic and antiphthisical, climatic, antipyrexial, palliative (or symptomatic), and antiseptic or bacillicide. Under this last heading the author includes the gaseous rectal injections introduced by Dr. Bergeon, of Lyons. While he claims a fair trial for the method, "savouring," as it does, "of carrying coals to Newcastle," by the injection of sulphuretted hydrogen into the rectum, Dr. C. Theodore Williams states that his own experience of it is limited to six cases treated at the Brompton Hospital, "*which certainly do not bear out the results of the author of the system.*"

We are glad to see that Dr. Williams emphatically condemns the use of chest protectors made of flannel and leather, which, he says (page 348), "cannot be based on any scientific principle"—we would add, or on any hygienic principle. Of course he dwells on the necessity of woollen underclothing.

The danger of infection by the sputum of phthisis is strongly insisted upon, and, at page 352, the bacillicide treatment of phthisical sputum and stools at the Brompton Hospital is described as follows:—

> "The sputum is received into the ordinary earthenware covered cups, containing sanitas fluid, which are emptied two or three times a day, and carried from the wards and galleries in galvanised iron buckets to the furnace used for the various heating and ventilating apparatus of the hospital, where it is well mixed with small coal and burned in the furnace. In this way a dangerous element is got rid of, with some saving in the amount of coal consumption. The stools of consumptive patients with intestinal ulceration are in the same way removed and destroyed."

This analytical rather than critical notice will convey the impression that we have formed a high opinion of Dr. Williams'

work, and, in fact, we do regard it as a most reliable and valuable treatise on consumption.

There are hardly any printers' errors, the type is clear, the paper is of excellent quality, and the book is illustrated by a series of beautifully-executed coloured plates and several woodcuts. A very few inelegancies have been detected by us in our reading of the book, and we feel sure Dr. C. Theodore Williams will not misconstrue our calling attention to them here with a view to their correction in that third edition, to the early appearance of which we look forward with confidence. The word "bronchiæ" occurs *passim* for "bronchia," the Greek "*τὰ βρόγχια*" being the bronchial tubes, or ramifications by which the trachea or windpipe (Gk. *ὁ βρόγχος*) passes into the lungs. At page 413 we meet the hybrid word "hyper-fibrinous" for "hyperinotic." At page 334 the awkward phrase "Metschnikoff of Odessa's interesting account," &c., occurs. Of course it should read either "Metschnikoff's (of Odessa) interesting account," or perhaps better, "the interesting account by Metschnikoff of Odessa," &c. Lastly, it is amusing to read, at page 341, of "fermented mares' or cows' milk." We know what "mares' or cows' fermented milk" is, but never before had we heard or read of "fermented mares."

These few blemishes will not, however, detract from the merit of the whole work, which is in all essential particulars worthy of the best traditions of the British School of Medicine.

THE EDITOR.

Beiträge zur pathologischen Anatomie und Physiologie. Herausgegeben von DR. ERNST ZIEGLER und DR. C. NAUWERCK. Zweiter Band. Zweites Heft. Jena: Fischer. 1887.

THIS serial publication, which has hitherto contained only works from the laboratory of Professor Ziegler, is now to be thrown open to communications from other sources. It is to be edited still by Ziegler and Nauwerck with the assistance of some of the most eminent pathologists in Europe. It is to contain chiefly papers giving the results of original works, although abstracts are not to be excluded. The papers may be published in German, French, Italian, or English. We cordially welcome this new venture, and anticipate for the "Beiträge" in its new form a lasting and striking success.

The present number is occupied entirely by papers emanating

from the Königsberg Pathological Laboratory, published under the direction of Neumann and Baumgarten. The first is by A. Kunz on "The Influence exerted on Infective Organisms by Iodoform." The experiments were made by mixing pure cultures of the organisms with iodoform and inserting the mixture in pockets made under the skin of animals. The organisms used were anthrax bacillus, the bacillus of rabbit septicæmia, tubercle bacillus, staphylococcus aureus pyogenes, putrefactive bacilli, and the bacilli of glanders. It was found that the admixture with iodoform did not prevent the infection of the animal in any of these cases, and that consequently iodoform is no protective against septic *infection*. In the case, however, of the putrefactive bacilli, iodoform exerted a marked influence, destroying the organisms and preventing the putrefaction. This effect is possibly in great part due to the liberation of iodine by the products of the limited action of the bacteria. This result is in harmony with the good results which have been got by surgeons from the use of iodoform in cases of putrid wounds, and in operations about the mouth, anus, vagina, and other places where putrefaction is apt to occur. It would appear, then, that the danger of infection with specific pathogenic micro-organisms is not prevented by treatment of putrid wounds with iodoform, but that the danger of an intoxication with soluble putrid matter is prevented, owing to the antisaprophytic action of the drug. "In other words, septic *intoxication* is prevented, septic *infection* not."

The second paper, "On the Histological Changes and on the Condition of the Blood in Double-ligatured Vessels," is by Dr. Georg Böttcher. He finds in the carotid of the rabbit that after double ligature a proliferation of the endothelium occurs, as shown by the presence of karyokinetic figures; that a similar proliferation takes place in the fixed connective tissue cells of the adventitia and parts external to the vessels. and that it is by these cells, and not by leucocytes or the blood itself, that the obliteration of the vessel is brought about.

As to the condition of the blood between the two ligatures, he finds:—1. That the statement of Baumgarten is true—namely, that the blood remains fluid in cases where antiseptic precautions are taken in making the ligatures; 2. That by long stagnation the arterial blood becomes venous; 3. That even after four weeks the red blood corpuscles may be perfectly intact—the discoloration, loss of lustre, and appearances of breaking down sometimes observed

are possibly in great part due to the manipulation necessary for the removal and examination of the blood; 4. Even after seven days the leucocytes show signs of fatty degeneration, while their nuclei still stain well; 5. Even after many days the blood plates are well preserved.

It was found that in normal blood and in that contained in the ligatured vessels leucocytes with scanty protoplasm and a single nucleus were much more numerous than those with multiple nuclei and more abundant protoplasm. In cases of slight and chronic inflammation cells resembling the former preponderate in the inflamed part, but when the inflammation is more severe the multinucleated cells are more numerous. Both may be derived from the blood by emigration. The cause of the difference is unknown.

In the third paper Dr. G. Wolffowitz details "Experiments on the Inoculation of Typhoid Bacilli on Lower Animals." He employed rabbits, mice, and guinea pigs, and worked with pure cultures which agreed in all respects with the bacilli discovered by Eberth and Gaffky. He completely failed to confirm the results of Fränkel and Simmonds, who, as is known, profess to have induced typhoid in animals by inoculation. In cases where the animals died the symptoms and *post-mortem* appearances had no resemblance to typhoid, and there was no evidence of growth or multiplication of typhoid bacilli in their bodies. The results of Fränkel and Simmonds are criticised, and it is shown that there is no evidence of the multiplication of bacilli in the bodies of their animals; that the deaths were probably due to a poison produced by the typhoid bacilli, not constantly, but sometimes, owing perhaps to peculiarities of the culture-soil, age of bacilli, &c., but that the cause of death was certainly not the same as that in human typhoid; that the organisms of this disease have not yet been successfully inoculated in animals, and that consequently in doubtful cases inoculation is not available as a method for clearing up the diagnosis.

The fourth paper, "On the Tenacity of Life possessed by the Tubercle Bacillus," is by Dr. Max Voelsch. It was found that spore-free and spore-containing bacilli showed no decided difference in their power of survival when heated in the dry or moist state, or when exposed to putrefaction.

The last paper is by Dr. Otto Skrzeczka, and treats of "The Formation of Pigment in Blood Extravasations." After a critical review of the literature, the author gives the results of his own experiments. He finds that the blood pigment becomes in great

part diffused from the corpuscles; that from this diffused colouring matter both granular iron-containing pigment and iron-free crystalline hæmatoidin are formed, while part of the former is produced also in the interior of cells. The blood-corpuscle-holding cells are not leucocytes, but "epitheloid" cells derived from the connective-tissue cells of the part. It is not quite clear what determines in one case the formation of iron-free pigment and in another that of pigment containing iron. It is supposed that the former is produced when the colouring matter of the blood is under the influence of still living tissue, while hæmatoidin is formed when this influence is no longer exerted.

Transactions of the Academy of Medicine in Ireland. Vol. V. Edited by W. Thomson, M.A., F.R.C.S., General Secretary; Surgeon to the Richmond Hospital, Dublin. Dublin: Fannin & Co. 1887. 8vo. Pp. 367.

Four years' experience of the working of the Academy of Medicine has justified the amalgamation of the Societies, and we do not anticipate that the assumption of the prefix of "Royal" will have any unfavourable effect upon its fortunes. The numbers of Fellows and of Members appear to have attained their maxima; the number of Student Associates, never large, is diminishing; and we are inclined to think that students duly recommended by their teachers should have free access to the meetings, as they had to those of the old Pathological Society. The latter used to give a certificate of regular attendance, which was valuable and prized. Might not the Academy do as much, certifying attendance at the meetings of one or more Sections? Might it not even give a copy of its proceedings, general or sectional, to a student regularly present at meetings of all or some of its Sections? The Council, however, is already beginning to show prematurely a symptom pathognomonic of senility in scientific bodies—a reluctance to adopt suggestions or introduce improvements. It has declined, apparently on the ground of expense, to adopt the recommendation of a Committee that discussions on papers should be reported and published in the Transactions. Presidents' Addresses, general and sectional—which *ought* to be worth printing, and would be worth printing if they were to be printed—are still suppressed. We doubt, moreover, whether the General Council, as authorised by by-law 64, exercises any strict supervision over the publication of papers. We suspect

that nearly every paper read is printed as a matter of routine, and that any one may shoot rubbish—though, of course, no one ever does—into the Transactions. The publication of "Cases," which are important only through the discussions to which they lead, is useless, so long as the discussions are suppressed.

The contents of this fifth volume of Transactions are up to, but not beyond, the average of their predecessors. Fourteen medical papers, 12 surgical, 7 obstetrical, are printed; 20 communications appear to have been made to the Pathological Section; 2 to the Sub-Section of State Medicine, and 2 to that of Anatomy and Physiology.

In the Section of Medicine Dr. Foot, whose papers seldom fail to interest and instruct, begins the volume with a report of a case of narcolepsy; or, as he would prefer to term it, "hypnolepsy." Dr. C. J. Nixon's case of myxœdema follows—a brief and valuable essay on the disease. In surgery Mr. Kendal Franks reports a successful case of nephrolithotomy—a practical comment on Mr. Lawrence's dictum, which he quotes—"The kidney, gentlemen, is fortunately beyond the reach of the surgeon." This paper, also, is more than a mere "case." Another specially noticeable paper in this Section is Mr. M'Ardle's on resection of the pylorus. Two obstetrical papers deserve special mention—Dr. T. More Madden's on vaginismus, and Mr. Lane's "Report of the Rotunda Hospital for the Three Years ending 3rd November, 1886." From the latter we learn that, for antiseptic purposes, corrosive sublimate solution has almost completely superseded carbolic acid in our great lying-in hospital. Of 3,414 patients attended in the hospital during the three years, 43 died—giving a mortality of 1·25 [1·26] per cent., or 1 in 79·39. Only 18 of these deaths were due to septicæmia—0·52 [0·53] per cent.; but Mr. Lane adds what he regards as even a better test of the freedom of the hospital from septic infection. He states that the following were the percentages of patients whose temperatures and pulses were "absolutely normal" during the puerperal state—74·66 in 1884, 83·54 in 1885, and 85·75 in 1886. The number of patients received into the hospital appears to rise steadily.

The most elaborate, and probably the most important, paper in the volume is Dr. Grimshaw's, "On the Prevalence and Distribution of Phthisis and other Diseases of the Respiratory Organs in Ireland," amply illustrated with maps and diagrams. The dependence of phthisis upon external conditions is so complicated that

even these facts and figures throw little light upon it, or upon the soundness of Dr. Buchanan's inferences, which, once received with unbounded confidence, are now beginning to be disputed. Of the ravages wrought by phthisis in this country the evidence is only too clear. In the decade 1871–80 more than one-tenth of the mortality in Ireland was due to it—and to it, in conjunction with other forms of disease of the respiratory organs, more than one-fourth. The average mortality from phthisis in that decade was 19·6 per 10,000; in England and Wales the most recently calculated average taken was 17·5, in Scotland 21·3. In Scotch towns the rate was 26, in Irish town districts 34·7. One interesting fact brought out by one of Dr. Grimshaw's diagrams is that the distribution of phthisis does not conform with that of other forms of respiratory disease. We learn that mountainous districts suffer least from phthisis "as a rule," but we cannot trace any necessary relation between the prevalence of boggy land, or the geological formation, or climatal conditions, and phthisis. Dr. Grimshaw's facts are valuable, and his diagrammatic exposition of them is worthy of all praise, but they do not lead us far towards prevention.

The execution of this volume is good, as usual. The misprints are few, though, we are inclined to think, more than they used to be, or ought to be. The lithographic illustrations—which are not very elaborate, and in one of which the figures are misplaced—might, we venture to suggest, have been prepared in Dublin.

Lectures on Certain Diseases of the Jaws. Delivered at the Royal College of Surgeons of England, 1887. By CHRISTOPHER HEATH, F.R.C.S. Illustrated. London: J. & A. Churchill. 1887. Pp. 128.

MR. HEATH has published, in a handy form, these lectures, which he delivered as occupant of the Hunterian Chair in the English College of Surgeons. We must confess to a certain feeling of disappointment when we read these lectures as they appeared in the *British Medical Journal*, for they were word for word with our familiar friend, "Injuries and Diseases of the Jaws," by the same author. The first two lectures are, in fact, a very useful condensation of Mr. Heath's well-known larger work, if we except the case of epithelioma of the lower jaw, introduced towards the close of the second lecture, and the very interesting paragraphs on actinomycosis in the same place. This latter disease has fortu-

nately in this country been confined so far to cattle—no instance of its appearance in man being yet recorded. Mr. Heath has collected the results of 75 cases of actinomycosis reported from the Continent, and from these it would appear that the disease occurs more frequently in men than in women, in the proportion of 55 to 21; the lower jaw would also appear to be the favourite site; carious teeth do not appear to influence its onset; and in the majority of cases the individuals affected belonged to callings which did not bring them into direct contact with diseased cattle. Our author quotes Moosbrugger's opinion that it is improbable that the human subject is inoculated either directly from the beast or indirectly through using its flesh for food. He thinks it not improbable that man, like the animal, is infected through the use of grain as food, or through inhalation of the spores of the organism; perhaps, also, occasionally by chewing straws or grain infested with the latter.

The third, and last, lecture treats of diseases of the temporo-maxillary articulation and closure of the jaws. This lecture we heartily commend to the notice of our readers as an excellent epitome both of the literature of the subject and the practical experience of Mr. Heath. This lecture also contains a good deal of information not to be found in Mr. Heath's previous work on the same subject—as, for instance, the very full account of a remarkable case of rheumatic and gouty disease of the neck and condyle of the lower jaw, taken from the work on that subject of the late Dr. Robert Adams, of this city. Two interesting cases are quoted from the practice of Mr. Spanton, of the North Staffordshire Infirmary, in which he divided the adhesions which formed on each side between the condyle of the lower jaw and the glenoid cavity, the disease following scarlet fever, and associated in one case with dislocation of the right hip from disease of the joint. This case is also remarkable from the fact that there was complete closure of the jaws without any apparent cause, there being no scars either inside or outside the mouth, the temporo-maxillary joint presenting no evidence of disease.

Mr. Heath in this chapter also points out the advantages of Esmarch's operation for closure of the jaws, the result of cicatrices, as contrasted with Rizzoli's, which advantages, we think, must be evident to most surgeons who have seriously considered the operation, inasmuch as it avoids the objectionable splintering of the jaw, and the removal of the wedge of bone by Esmarch renders certain

the formation of the desired false joint. These advantages seem to us to outweigh the objection to Esmarch's procedure—viz., the necessity for an external incision.

The illustrations, mostly taken from Mr. Heath's previous work, are excellent, with the exception of the first woodcut of the microscopic preparations of actinomycosis.

A Short Manual of Surgical Operations. By ARTHUR E. BARKER, F.R.C.S.; Surgeon to University College Hospital; Assistant Professor of Clinical Surgery in University College, London. With Sixty-one Illustrations. London: Longmans, Green, & Co. 1887. Pp. 423.

To realise the extent of the certain but gradual revolution which the introduction of Listerism has brought about in the various domains of operative surgery, it is only necessary to compare the book before us with manuals on the same subject which have preceded it. No apology is required for its production—it speaks for itself. Similar works a few years ago may have been as good, but they are now quite out of date; in the present work we find the newer and the better methods, rendered safe under the protective influence of a perfect asepticism, clearly and ably, if somewhat shortly described. It would be impossible to epitomise a book which is in itself an epitome. In the preliminary remarks on surgical operations in general we find the key-note of the whole:—"It is assumed throughout this work that each and all are conducted upon the strictest principles of what is now known as the 'antiseptic' or 'aseptic' system of wound treatment." The author shows in this chapter that "the surgeon thoroughly imbued with the principles may content himself with a very simple practice in most cases," and that an elaborate paraphernalia is not by any means essential to success. The suggestions offered as to the preparation of sponges, silk sutures, and of dressings are well worthy of attention.

Throughout the book the author follows a systematic plan. In the first place operations are grouped, each group having a chapter devoted to it. Thus we have Chapter II., Operations on the Arteries; Chapter III., Operations on the Veins; Chapter IV., on the Nerves; Chapter V., on Tendons and Fascia; Chapter VI., on the Bones, and so on.

Each of these chapters opens with a consideration of (1) the collection and arrangement of the instruments and other mechanical

requisites for the operation; (2) the position of the patient's body; (3) the position of the operator and of his assistants; (4) landmarks for the incision and for the operation, and (5) memoranda. When necessary, these points are again reviewed in respect to particular procedures.

Throughout the book the better known and older forms of operation are concisely dealt with—thus, in describing the less known and newer methods, the author has been able to devote more space and care to them, without making the book unwieldy and too bulky. It would be impossible to review here these newer methods, but we would specially commend Chapter XII., on Operations on the Alimentary Tract, and Chapter XV., on Operations on the Skull and parts within it—subjects in connection with which Mr. Barker's name is already well and deservedly connected.

We can cordially commend this book to operating surgeons, and we believe there are very few who will not find information, both suggestive and instructive, in its pages. The woodcuts throughout, with eight or nine exceptions, are executed by the author, and, taken as a whole, entitle him to credit as a draughtsman.

Outlines of Practical Physiology; being a Manual for the Physiological Laboratory, including Chemical and Experimental Physiology, with Reference to Practical Medicine. By William Stirling, M.D., Sc.D. London: Griffin & Co. 1888. Pp. 309.

It is with sincere pleasure we call the attention of our readers to this book, which supplies a want which has been much felt both by students and teachers of physiology. It contains a very extended course of laboratory work, giving, in fact, details of almost all the experiments which could be performed by students, excepting those which must be performed on living animals and which would be painful if the animals were not anæsthetised. It makes one blush for the intelligence of his country when at the end of the nineteenth century it is possible in England that a student of physiology, who has advanced in his studies so far as to be in the position to make so simple an experiment as an investigation of the blood-pressure (an experiment which could be performed without the infliction of the slightest pain on the animal), should be stopped and compelled to make-believe that he was performing the actual experi-

ment by merely arranging his apparatus and making the dissection on a dead animal as directed at page 242. This is the more to be regretted as blood-pressure experiments are far more useful for medical practitioners than the experiments on general muscle and nerve physiology, of which most courses of experimental physiology mainly consist, and whose bearing on the understanding and treatment of disease is, to say the least of it, remote, however great their scientific importance may be.

Professor Stirling's manual is divided into two parts. In the first, on Chemical Physiology, experiments are given on proteids, carbo-hydrates, and fats; on the blood, digestion, including glycogen, milk, muscle, and the urine. This part, although good in most respects, is, to our mind, less satisfactory than the second part on Experimental Physiology. We think the separation of chemical and experimental physiology is unfortunate. The study of the chemistry, say, of muscles, is just as much an experimental research as is the study of the laws of muscular contraction or fatigue. It appears to us that everything should be done that is possible to make it clearly understood that physiology is in all its branches an experimental science and not one of mere observation, and that its relationships are much more close with chemistry and physics, which are universally recognised as experimental sciences, than with anatomy, which is only to a limited degree experimental, but mainly a science of observation and comparison. The lamentably backward condition of physiology in this country, and the almost incredible ignorance of the nature and scope of the science which prevails both inside and without the medical profession, is, we hold, largely due to the association of anatomy and physiology which in some of our schools even still exists to such a degree that the two sciences are supposed to be taught by a single professor.

The experimental part of Professor Stirling's book consists of forty-four chapters, and deals with the general properties of muscle and nerve tissue; the frog's heart, the heart and circulation of the higher animals, including the use of the stethoscope, sphygmograph, phthysmograph, and kymograph; the respiratory movements, the exchange of gases in respiration, the laryngoscope, and the production of voice and of the vowel sounds; reflex action, the functions of the nerve-roots, and the organs of special sense.

The chapters on the Eye are very full and of great excellence. We should have liked in many cases to have the very clear accounts of the methods for the performance of the experiments accom-

panied by a little explanatory matter as to what the experiments show. Students are fond enough of making experiments and of mounting with great care and elegance microscopic preparations, but manifest in general far less liking for the thought and reasoning necessary in order to understand the meaning and import of what they observe. And a good deal of verbal instruction on the part of the teacher might have been spared if the exact object of the experiments had been more fully stated, and if it had been more clearly shown how the phenomena observed satisfied this object. As to the descriptions of the experiments themselves and the diagrams which illustrate the text, we have nothing but praise. They are short, but at the same time so clear that any student with average intelligence could not easily go astray.

Comments on the Report of the Committee on M. Pasteur's Treatment of Rabies and Hydrophobia. By Surgeon-General C. A. Gordon, M.D., C.B. London: Baillière, Tindall, & Cox. 1888. Pp. 96.

In a former work Dr. Gordon expressed himself as dissatisfied with the evidence in favour of the treatment of rabies by inoculation. He now criticises the Report of the English Committee appointed to inquire into the results said to have been obtained by Pasteur. He goes, paragraph by paragraph, through this Report, and shows, as he thinks, the inconclusive nature of the results at which it arrives. It would be, of course, impossible to follow the author through his arguments. The position which he maintains will be sufficiently evident from the following extract:—

"*The sum and substance of the whole matter* comprised in the Report under comment is accordingly expressed as follows, namely:—The precise diseases or conditions to which that Report refers remain undefined, indefinite, and variously described. Their existence in a specific sense is even doubted and questioned. An artificial product from a body dead by an undefined disease, when injected intra-durally, gives rise to non-specific phenomena, such as also follow a similar application of non-specific matters. Ptomaines, thus used, may induce pyæmic symptoms. Objection is taken to the principle on which anti-rabic inoculation is based. The statistics regarding its operation are arbitrary and inferential. Nor can results, such as follow 'experiments' on animals, be depended on when dealing with man. Mortality in France by 'hydrophobia' has increased contemporaneously with the development of the particular method of

'inoculation,' by means of which it was declared, boastfully, that the affection so-named was to be 'stamped out.' The first method of that inoculation was abandoned as useless; the second 'modified' as dangerous. Pasteur institutes have been suppressed in various towns and cities; a protest lodged against that in Paris. No animal has ever yet been 'cured' of rabies by that method. Statistics, such as they are given in the Report, with reference to hydrophobia compare unfavourably with results under ordinary methods of treatment, and even in the absence of all treatment. But, the adoption of inoculation being impracticable, the Report declares that 'police regulations would suffice if they could be rigidly enforced.' The laboratory, in fact, gives way to Scotland Yard; the 'scientist' to the policeman."

The Annual Report of the Carlow County Infirmary, for the year 1887. Carlow: "Sentinel" and County Printing Office. 1888. Pp. 6.

From this Report, by Mr. Robert T. O'Callaghan, the surgeon to the Infirmary, we learn that during the year ending January 1st, 1888, 189 patients were admitted to the wards. Of these patients 157 were discharged cured, 29 were relieved, and 3 were pronounced "incurable," and so discharged. The deaths numbered 6—one was that of a male, aged twenty-six, who succumbed to internal hæmorrhage, the result of fracture of the spine and five ribs. A lad of ten years of age died of acute ulcerative endocarditis, and a young man, aged twenty-two, of consumption. A woman, aged fifty-two, sank from exhaustion after ovariotomy performed for cancer of the ovary; and a man, aged seventy, from exhaustion due to cancer of the larynx. The sixth death was that of a woman, aged twenty-four, who died of syncope depending on fatty degeneration of the heart.

During the year as many as 56 operations were performed, including two ovariotomies, with one recovery; two laparotomies, both successful; one strangulated umbilical hernia with radical cure; and three amputations, all successful. Ether was the anæsthetic used, and it was administered by Mr. W. O'Meara in Ormsby's inhaler.

The number of extern patients seen amounted to 900, and 1,106 patients in all were relieved in 1887. The number of patients relieved in 1886 had been 766. Mr. O'Callaghan observes that in proportion to the increase in the number of patients the cost of maintenance is much less than the previous year—(1886,

£597 7s. 2d. for 766 patients; 1887, £607 16s. 7d. for 1,106)—and also that the private wards have been much more frequently occupied.

A well-merited compliment is paid to the skilled and most efficient nursing staff, who are under the control of the lady superintendent, Miss M. F. M'Cord.

The sanitary arrrangements have been perfected so far as possible—the drains having been thoroughly overhauled and repaired at considerable expense. In response to a special appeal, an excellent bath and lavatory have been erected, with a good supply of both hot and cold water throughout the Infirmary, and all the wards have been furnished with improved hospital beds.

We hope that next year Mr. O'Callaghan will write more fully on the very interesting tables which at present make up the greater part of the Report

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Stricture of the Urethra; its Diagnosis and Treatment facilitated by the use of New and Simple Instruments. By E. Distin-Maddick, F.R.C.S. Edin. London: Baillière, Tindall, & Cox, 20 King William-street, Strand. 1887.

The late Dr. Abernethy was a very distinguished man. He was, moreover, eccentric, and posterity has fathered on him, rightly or wrongly, many sayings that are chiefly remarkable for their rudeness. But heretofore no one has dared to say that it was the perusal of Abernethy's lectures that incited him to write. Mr. E. Distin-Maddick, however, says it now without any reservation, the reason being that the author's "experience of stricture agrees so much with his" (Abernethy's). We very sincerely wish that Mr. E. Distin-Maddick had not read Abernethy, because we might have escaped this setting forth of his views. The truth is that the author has invented some instruments, and he forthwith proceeds to make their great utility known. In order to clear the ground of opponents, he goes out with a tomahawk and scalps all round. It is clear that the great body of medical practitioners know nothing about strictures; that they, indeed, produce strictures with their "murderous instruments;" and he impresses on teachers and writers to set an example of gentleness by "abstaining from those mistaken deeds of violence and blood they too often enact at our hospitals." But he does not even stop at the poor surgeons. Speaking of the connection between gonorrhœa and

stricture, he says :—"While I retain my senses, is anyone going to make me believe that the amount of strictures treated by the profession is due to gonorrhœa? Good heavens! no! *According to such a supposition, there would not be a sound urethra in the United Kingdom.*" We must let Mr. Distin-Maddick speak for himself, of course; but we very strongly object to being included in a wholesale charge of this sort. It is an imputation upon the morality of the whole body of men in the three kingdoms; and we note it not so much for its laughable absurdity as to show the utterly reckless manner in which this gentleman expounds what he calls his "ideas." If we were to put in a word what is the whole burden of his book, we should say it is comprised in "gentleness" in the use of the catheter—a precept that is everywhere taught. Roughness there is undoubtedly in many cases, but we doubt the power of this author to make it less. If he presumes to teach, he must show us some reasons why we should listen to him, and he must learn at least something of the manner which becomes an author. To use violent language, which is, moreover, not always grammatical; to trumpet his own wares, and invite all to come to him as if he alone held the means of cure—these are not the methods by which a writer will attract any important portion of the profession. We only see one excuse for the bumptiousness which is in almost every page of the book. We must suppose that the writer is a young man. If he is, we shall be glad to see the result of time in giving him experience in his profession, and in the use of language. If he is not young, all we can then say is—we pity him.

Are Epidemics Contagious? By JOHN PARKIN, M.D. London: Sampson Low, Martin, Searle, & Rivington. 1887. Pp. 146.

DR. PARKIN, who died just two years ago, devoted a great deal of his long life to the study of cholera and other epidemic diseases. He arrived at the conclusion that all these diseases have their cause in the atmosphere. And the present work has been followed by another on the volcanic origin of epidemics, which we have already noticed in this Journal.[a] In the case of cholera he supposed that he had discovered in carbonic acid a certain antidote. He altogether disbelieved in the contagious nature of such diseases as smallpox, plague, typhoid fever, and cholera; and, in the present

[a] See the number for February, 1888. Page 163.

work, these views are put forward with great vigour, and in such a way as to leave no doubt on the mind of the reader that Dr. Parkin was in earnest, and fully convinced of the truth of his belief, and, unfortunately, equally little doubt that he was incapable of weighing evidence and of understanding the drift of modern pathological and sanitary science. His work can have only an historical interest, and, we should imagine, will produce no effect on the opinions of the physicians of the present day, or on the practices of modern sanitarians.

On Abdominal Section for the Treatment of Intra-Peritoneal Injury. By Sir William MacCormac, F.R.C.S.; Surgeon to, and Lecturer on Surgery at, St. Thomas's Hospital. London: Ballantyne, Hanson, & Co. 1887. Pp. 98.

This *brochure* forms the Annual Oration delivered before the Medical Society of London, May, 1887. The Address itself occupies 41 pages, the remainder of the work consisting of a valuable Appendix. It is almost superfluous to say that this oration is a valuable contribution to a very important branch of surgical literature. The author shows, by quotations from the writings of earlier surgeons, what a change has come over the spirit of the age in regard to dealing with abdominal injuries by operation—a change due to principles having been laid down which, "however they may be criticised, have revolutionised the art of surgery in every country in the whole world where scientific surgery is known."

Sir William deals with three classes of injuries:—

1. Incised and punctured wounds of the abdomen, implicating the intestine or other viscera.

2. Abdominal gunshot wounds, chiefly as they affect the intestine.

3. Traumatic rupture of the intestine and viscera without external wound.

In advocating surgical interference in these cases the author has strong grounds to go upon. Left to themselves, recovery is so rare that to wait and hope for it to occur is to expose the patient to almost certain death. Sir William MacCormac shows that of eighteen stab wounds, in which the injured gut was sought for and sutured, ten recoveries followed. Again, seven lives were saved out of thirty-two cases of penetrating gunshot wounds in which operative interference was resorted to. Out of sixteen

collected cases of rupture of the urinary bladder six recoveries were obtained by abdominal section. Success has, however, not yet been attained in cases of rupture and contusion of the intestine or other abdominal viscus without external injury, the thirteen recorded cases having all proved fatal.

It is thus shown that it becomes the imperative duty of the surgeon to give the patient the best chance which can be afforded—namely, by operation. The diagnosis must always be a difficulty, but even when the weight of evidence is nearly evenly balanced, exploratory incision should be decided on, the surgeon being prepared to deal with the lesion which he may find, and his chance of success depends upon his acting quickly. He will find in the pages of this "Oration" doctrines, hints, and advice which he will find of the greatest use to him, when called upon to undertake such a case, and it will be wise for him to have studied the matter beforehand.

The concluding pages by the author we commend to those who still shut their eyes to the advantages of asepticism in surgery. We would ask them to compare, for instance, these two statements:—"At Sedan, among the French troops, pyæmia was the uniform cause of death after operation in gunshot fractures, and in many cases of simple flesh-wound. Irrespective of the severity of the injury, the part of the body concerned, or the manner of treatment, the disease, once fairly developed, proved equally fatal." "We now possess means of checking this horrible malady, and in the campaign in Egypt in 1882 our surgeons were furnished with the best antiseptic appliances, and the material in their hands was turned to such excellent account that *not a single man* died from pyæmia, septicæmia, erysipelas, or hospital gangrene—a result altogether unparalleled in the annals of war."

Royal University of Ireland. The Calendar for the Year 1888. Dublin: Alex. Thom & Co. 1888. 8vo. Pp. 340.

We received a copy of this important Calendar on March 9. Surely there is no reason why its appearance should be so long delayed year after year. The Calendar of the University of Dublin is published at the very beginning of each year, and so should that of the younger sister University.

We notice that for the first time the papers set at the various examinations of the Royal University in 1887 are published in a

separate volume, forming a supplement to the Calendar. This change was rendered necessary by the constantly increasing size of the volume, which was becoming unwieldy.

The changes in the Regulations for Examinations in the Faculty of Medicine, to hold good after 1888, will be found at pages 152 *et seq.* So recently, also, as February 1, 1888, the Senate resolved that, subject to Her Majesty's sanction, students who pass the examination now appointed for the degree of M.B. will be entitled to receive the three primary degrees of M.B., B.Ch., and B.A.O., without any additional fee beyond what is already prescribed in the Calendar for admission to the M.B. degree. This is evidently with a view to facilitate the registration of successful candidates under the Medical Act of 1886.

An Index of Surgery. Being a Concise Classification of the Main Facts and Theories of Surgery, for the Use of Senior Students and Others. By C. B. Keetley, F.R.C.S.; Senior Surgeon to the West London Hospital. Fourth Edition. London: Smith, Elder, & Co. 1887.

In six years Mr. Keetley's "Index of Surgery" has run through four editions, and may be said to have no competitor in its own special province, and yet we cannot express gratification at the fact of its success. Whilst such books are popular amongst students, there is little probability of surgery making much progress either as a science or as an art.

Every medical meeting latterly tells of superficial knowledge and of text-book reading, and books of the nature of Mr. Keetley's are to blame for this. Students now read some handbook of surgery, and just before examination make up the "Authorities" from Keetley. Consequently, when they launch out amongst the public they are perpetually meeting strange cases, and in this age of "gush" their first idea is to write to the papers. Our old classics are simply accumulating dust: the well-read surgeon is becoming phenomenal—any little reading done being principally of German theories, especially if they possess the advantage of being recent—and the fact that they are German is supposed to justify their acceptance, no matter how absurd the theory.

We would like to see more attention given to our old writers, who so well and truly told the clinical histories of their cases. We would like students to remember that medicine has gained more

by trained observation than she has acquired by mechanical aids, though we would not be considered as dispraising such helps to diagnoses. Watching by the sick-bed, and noting every change of facial expression and posture, is even more valuable than the cut-and-dry record of a uniformed, chatelaine-jangling nurse; and for the young professional, we think extensive reading of well-told clinical histories is next in value to seeing the case. If time does not allow of this, or if he wishes to merely refresh his memory, he will find Keetley's "Index of Surgery" an excellent and reliable reference-book.

The Year-Book of Treatment for 1888. *A Critical Review for Practitioners of Medicine and Surgery.* Cassell & Co., Limited: London, Paris, New York, and Melbourne.

EVERY profession now possesses one or more year-books, and for no profession is there more need of such a book than that of medicine.

It is impossible for a practitioner, no matter how diligent a reader, to keep pace with the enormous mass of current medical literature, and a year-book or retrospect becomes his principal guide. This dependence of the busy practitioner on the Year-Book should be kept well in mind by the sectional editors, who ought to recognise the fact that a well-digested summary of work done during the year in medicine, together with a plain statement of the direction in which advance is being made by medicine as a science is what is required.

Practitioners have not time to read a number of excerpts, and then draw a conclusion as to the plan of treatment, especially when the excerpts are—as they too frequently are—statements of German theories—theories of which not one per cent. will ever have other than an ephemeral existence.

A practical book is wanted by the profession in which not theories, but practical facts, will be briefly told. We cannot congratulate Messrs. Cassell on this year's issue of their book, for it does not meet what we believe to be the requirements of the profession as fully as it should. As is natural, and indeed, perhaps, unavoidable, the articles are unequal; and of those that we would commend the best are "Diseases of the Heart and Circulation," by Dr. Mitchell Bruce, "Diseases of the Lungs and Organs of Respiration," by Dr. Powell, and "Diseases of the Kidney," by Dr. Ralfe.

The summary of therapeutics is more likely to display the editor's knowledge of organic chemistry than to benefit the reader. What advantage to a general practitioner is the following?—

"Hæmatropin is constituted of mandelic acid and tropin, and mandelic acid stands midway chemically between tropic acid and benzoic acid—

C_6H_5COOH $C_6H_5CH<^{COOH}_{OH}$ $C_6H_5CH<^{COOH}_{CH_2OH}$

Benzoic Acid. Mandelic Acid. Tropic Acid."

And yet the editor never alludes to the fact that "Stenocarpine"—which he describes as "a new local anæsthetic"—has been proved to be a fraudulent mixture of cocaïn and atropin.

We would suggest that he should be assisted in the next edition by some one who will consider the wants of his hardworking brethren, and tell us more of practical therapeutics—such as the fact that a small quantity of glycerine injected into the bowel acts as a reliable aperient.

Organic chemistry is a charming study for gentlemen who have leisure—but for the hardworking practitioner, with a family dependent on his exertions, and who has, in the struggle for bread, forgotten the hypothetical radicles of the fatty, aromatic, and paraffin series, the therapeutic summary of the 1888 Year-Book contains little information.

Dictionary of Terms used in Medicine and the Collateral Sciences. By the late Richard D. Hoblyn, M.A., Oxon. Eleventh Edition. Revised throughout, with numerous additions, by John A. P. Price, B.A., M.D., Oxon; Assistant-Surgeon to the Royal Berkshire Hospital; late Physician to the Royal Hospital for Children and Women. London: Whittaker & Co.; George Bell & Sons. 1887.

The present edition of this popular dictionary differs from the last, several new words having been added and some obsolete ones omitted.

The work does not profess to be other than a useful and convenient handbook of reference, possessing nothing of the fulness of such a book as the New Sydenham Society's Lexicon. The advance of microscopic work, and its influence on medicine, is shown by the fact that the subject of bacteria occupies two columns. Ptomaïns, from the knowledge of which many problems may be solved, are succinctly and clearly explained.

Having reached an eleventh edition, the book needs no recommendation from us, but justice to the care and industry of the editor requires that we should recommend this dictionary to the profession as one of the most generally useful handbooks we possess.

Revue Médico-Pharmaceutique. Autorisée par Iradé Impérial. Constantinople: A. Christidis et Cie. Première Année. No. 1. Janvier, 1888. Pp. 16.

THE beautiful cursive characters of the Niskhi alphabet which adorn this Constantinopolitan journal recall that glorious epoch when the conquering Turk, overthrowing the effete monarchy of Demetrius and Thomas, the weak sons of a weak father, scattered broadcast through Europe the literary treasures of the classic minds of ancient Greece. So were liberated those priceless works which the appreciation of Erasmus and the enterprise of Aldo Manuzio gave to Europe as the fruitful seed destined to produce a rich harvest in the works of Bacon, Hobbes, Boyle, and others. These writers prepared the literary vineyard for the Encyclopædists—reviving the love of science and promoting the spirit of Rationalism which has brought forth the condemnation of persecution and the love of tolerant forbearance—the best characteristics of the nineteenth century. Bound in one cover we have the Semitic, Niskhi, and the Aryan Roman literals, in the *Revue Médico-Pharmaceutique.*

According to A. L. Davids, whose "Grammaire Turke," published in 1836, is the standard authority on the Ottoman language, the Turks, prior to becoming Moslems, used "L'Alphabet Oûighoûr." The same author gives in the preface, pages 60–70, of his great work a good summary of the scientific labours of the Turks which would, if read, correct many erroneous opinions concerning this much-maligned people. The study of a language spoken by Nomad tribes along the great central belt of Asia, and by the inhabitants of Russia from the Black Sea to the Baltic along their eastern frontier, cannot fail to be interesting. If it did nothing more, it would promote respect for a people to whom we are so much indebted for shaking Europe free from the paralysis of Absolutism, and promoting the Altruistic spirit of to-day, which is the life of our medical charities.

The review contains, amongst other valuable matter, a very readable article on the epidemic of cholera in 1884-87, and one on

the employment of cocaïn by M. A. Bavochi. And from its pages we learn that in the far East, as in the busy West, adulteration is a favourite path to riches, the more serious evils of the fraud being the subject of an article by M. Pierre Apery.

Evidently there is room in Constantinople for a medical journal, and if, instead of making their journal a thing of excerpts, they will give to the profession a good account of the diseases to which the inhabitants of Turkey are most liable, together with a statement of the sanitary condition of the people, the journal will play a useful part in medicine, and be a decided success. Scissors and paste, except in very moderate quantities, ruin the health of any journal.

In Constantinople there is plenty of scope for original matter. We need only mention the fact that, in 1882-83, 74,091 pilgrims travelled by land, and 46,519 travelled by water to Mecca—being a total of 120,610. Of those travelling by land, the mortality is given as 11,977.

It would be advantageous to know something of the children attending the "Medresses" or public schools, which Osmanli forethought so numerously and freely supplies to the population—for be it remembered that, whilst nobles in Europe made their mark, the literature-loving Turk had already provided free education.

Biliousness: its Causes, and its Rational Treatment. By Adolphus E. Bridger, B.A., M.D., F.R.C.P. London: Renshaw. 1887. Pp. 108.

This work is evidently written, not for the profession, but for the lay public. Like others of its class, it displays a good deal of self-sufficient ignorance, and an abundant belief in "rational" therapeutics. It appears to us not to call for further notice in our pages.

BLISTERS IN INFANCY.

J. Comby (*Prog. Méd., Centralb. f. Kinderh.*) reports the death of a child two years old on whom two blisters were applied for broncho-pneumonia. One blister was kept on for six and the other for four hours. The blistered surfaces became large, suppurating, and finally gangreneous sores, three days after which the child died. Gangrene resulting from the application of blisters to infants is noticed by many of the older writers on diseases of childhood.

PART III.

HALF-YEARLY REPORTS.

REPORT ON MIDWIFERY AND DISEASES OF WOMEN.

By Andrew J. Horne, Fellow and Examiner in Midwifery, King and Queen's College of Physicians; ex-Assistant-Physician to the Rotunda Hospital, Dublin.

[*Continued from page 171.*]

RUPTURED TUBAL PREGNANCY.

In the *British Gynæcological Journal* for November, Mr. Lawson Tait contributes a paper on Twelve Cases of Ruptured Tubal Pregnancy, in which he performed abdominal section, and tied the bleeding point on account of hæmorrhage, which threatened life, with the happy result of eleven recoveries and only one death.

He details *in extenso* the cases.

In his remarks he says that these twelve cases, added to twenty-three cases already reported in the columns of the *British Medical Journal*, complete a list of thirty-five operations performed, every one of them under conditions of the utmost gravity, when life was threatened, and he has no hesitation at all in saying that thirty-two or thirty-three of these lives, if not all thirty-five, would have been sacrificed but for prompt interference. Of the thirty-five only two succumbed; one, the first on which he operated, because, as he says, "I knew not what to do. I was too long over the operation; I fiddled about securing the bleeding points as they arose, instead of doing as I always do now—separating all adhesions, regardless of the bleeding points, until I get as rapidly as I can down to the base of the tumour, which is the broad ligament. A ligature placed round that, and secured, at once arrests the hæmorrhage."

The diagnosis is not always possible, but it may be made correctly in probably 85 per cent. of the cases. The real clue to

the nature of the case is a history of sterility for some considerable time, the arrest of menstruation for weeks, or even months, and a sudden access of pain and collapse, with repetition of these attacks. The operation is simplicity itself. Open the abdomen, go at once to the seat of the rupture, that is, the broad ligament, and tie it—for, until you come to the ligament itself, the tissue is always so rotten and friable that any attempt to arrest the bleeding in any other way cannot succeed. Of course amputation of the ligatured mass is a matter of necessity. Nobody would ever dream of leaving such a thing to putrefy in the abdomen.

He discusses at some length the treatment by which it is proposed to destroy the life of the fœtus, and arrest the growth of the ovum. Speaking for himself, he says—"I am never called in to these cases until the discussion of a proposal of that kind is too late; for, being engaged exclusively in special practice, I have no opportunity of seeing, and never have seen them until the period of rupture. An electrolytic needle, under such circumstances, would have as much effect as a pinch of snuff; and in one of the propositions now laid before you, we have abundant proof of the fœtus having been dead for weeks, and yet hæmorrhage had been going on." If the cases were seen and diagnosticated—which he very much doubts they could be before the period of rupture—the introduction of an electrolytic needle, if it happened to pierce the body of the fœtus, might kill it; but would it kill the placenta, which, as we know, in the majority of instances appears to go on growing after the fœtus is dead? When the period of rupture, however, has been reached, and the hæmorrhage is going on, there is nothing, so far as we can see, but for us to follow the surgical rule—to cut down and tie the bleeding point.

TREATMENT OF ENDOMETRITIS.

In the *Zeitschrift. f. Geb. u. Gyn.*, XIII., 3, the following method of treatment is recommended by Veit in cases of endometritis. Thorough curetting of the intra-uterine surface, preceded, when necessary, by dilatation of the cervix, washing out of the cavity with a solution of carbolic acid, injecting from one to six drachms of tincture of iodine, and repeating the injection every fourth to sixth day—from six to twelve being the mean number of requisite injections. As a result of this treatment a normal mucous membrane ordinarily soon reforms, and he has found recurrence of the affection less frequently than after other methods.

REMARKS ON THE TECHNIQUE OF VAGINAL HYSTERECTOMY.

Under the above title Dr. Martin, of Berlin, has written a short article in the November number of the *American Journal of Obstetrics and Diseases of Women and Children.* He prefaces his remarks by saying that vaginal hysterectomy, whether done for cancer or any other reason, is not so familiar to the American gynæcologist as it is to his German *confrère.* It is an operation done in the depth of the vagina, and naturally much more difficult than any other one performed on the outside of the genital organs. The possibility of removing the uterus from the floor of the pelvis has been established by experiment, and the feasibility of performing the operation on the living has been so often demonstrated, and with such favourable results, that there can be now no doubt that this operation belongs to the legitimate procedures in gynæcology. He then proceeds to describe the method of operating to those who still lack the necessary experience.

It is of no special importance on which side of the uterus the detachment of the cervix from the fornix vaginæ is begun. We can open the floor of the pelvis from the sides, in front or behind, and can safely reach the peritoneum and detach the cervix. At all events, the operation should be undertaken only when the uterus is freely movable, so as to allow stretching of the field of denudation. He prefers to open the posterior fornix, because at this point the peritoneum is generally reached at an earlier time. He then unites the vagina to the peritoneum by sutures, introduced at some distance from the edge of the wound surface, thus controlling the bleeding as well as the gaping of the lymph spaces of the pelvis. Through this opening he performs the preliminary ligation of the pelvic floor on both sides. The detachment of the lateral fornix must reach the side of the body of the uterus; the cervix must be thoroughly freed. He generally finishes one side before proceeding with the other.

When the cervix has been freed from behind and both sides, the detachment of the bladder is entered upon, and here the author remarks that at this point of the procedure he never feels quite free from embarrassment, notwithstanding having performed the operation two hundred times. He joins the edges of the lateral wound by a horizontal incision, which follows the line of detachment of the anterior fornix to the cervix. The vagina is cut through at this place, and the separation of the bladder is effected

with the fingers. The extent of the connection between bladder and cervix varies remarkably. On this account a great amount of care is required in the detachment of the bladder. He then details how in two cases he injured the bladder in his operations, but without any ill result.

The ureters he never saw in any of his operations; they enter the bladder so close to the pubic arch, and far from the cervix, that they can hardly be exposed when the cervix is freed from its attachment to the pelvic floor.

The final removal of the uterus is performed by some operators after the fundus uteri has been everted; by others without eversion. Martin says—"If the uterus is large, I evert it through the posterior opening; if it is small, and can be brought out easily, I do not evert it." In order to evert the uterus he pushes the cervix forwards and upwards, expands the posterior hollow of the fornix with a plain, flat hook, and catches the posterior surface of the body; this is brought down, and as fast as the posterior surface comes into view other forceps are inserted until the fundus passes the hollow—then the Fallopian tubes and upper part of the broad ligaments come into view. It is very important, if possible, to remove the whole tubes with the ovaries. In order to accomplish this the everted uterus must be pushed aside, with the finger catch the ovary and the tube, thus stretching the lateral parts of the broad ligament, and into this the ligatures are inserted. He tries to attach, with these same ligatures, the rest of the ligament to the vaginal fornix. When the ligament is thoroughly transfixed, he detaches the uterus, tubes, and ovary of that side; the same is done on the other side.

The opening in the floor of the pelvis is diminished at once, so that when the edges of the wound are tied it is frequently difficult to find it. Some operators close this wound at once; to this Martin says he cannot make up his mind, as he still continues using a smooth, India-rubber drainage-tube, the end of which must lie in Douglas' pouch. To guard against infection of the peritoneum, the outer end of the tube is surrounded with salicylated cotton.

He avoids vaginal injections, unless there are decomposed discharges.

The bowels are moved on the fourth or fifth day, and he begins to remove the sutures about the fourteenth day, at intervals of two or three days.

THE TREATMENT OF RETROFLEXION OF THE UTERUS WITH ADHESIONS.

Every gynæcologist will gladly welcome any proposal which will increase the efficiency of our treatment in cases of retroflexion of the uterus when bound down by adhesions, as hitherto cases of this kind have been the most distressing with which we have to deal.

Important papers bearing on this subject have lately appeared—amongst those, Schultze, in the *Zeitschrift für Geburtshülfe und Gynäcologie*, Band. XIV., Heft. 1, "On the diagnosis and breaking down of peritoneal adhesions of the retroflexed uterus," seems deserving of attention.

Schultze's method of replacing the retroflexed uterus consists in a process of breaking down the adhesions bimanually. He lays great stress on an accurate diagnosis of the kind of hindrance to reposition, which may exist in the individual cases, as on this his method depends. He has now practised it for some years in a very large number of cases, and has never seen the least mischief result from it, but it has been followed by the most beneficial results.

His method is thus described:—The bowels and bladder having been completely emptied, the patient is placed in the lithotomy position, on the edge of the operating table. The operator introduces the index and middle fingers into the rectum, and if any fæcal matter remains in the lower bowel it is washed away by means of an irrigator with warm water. The irrigation has also the advantage during the manipulations, as it allows the fingers to be passed more readily beyond the ampulla recti by spreading out the folds of the rectum. At the same time, the thumb of the same hand explores the vagina, and the other hand is employed to examine through the abdominal walls. After exact exploration of the fundus uteri, tubes, and ovaries, in their abnormal position by the fingers in the rectum, the body of the uterus under control of the external hand is gently raised up. The adhesions are thus put upon the stretch, and if the fundus can be raised to the promontory of the sacrum, it is caught by the hand acting externally through the abdominal walls, and brought forward into its normal position.

The extent, origin, and course of the adhesions are exactly ascertained, and upon this knowledge depends the future treatment of them. The slighter adhesions usually yield to the pres-

sure of the fingers; the more extensive ones are manipulated by the finger-tips, much in the same way as an adherent placenta is peeled off. The stretching or separating is practised as much as possible upon the uterine ends of the adhesions, and dragging upon their attachments to the rectum or their pelvic insertion is avoided. When the uterus has been thus anteverted it is kept in position by a figure-of-eight pessary.

Schultze is careful to use force sufficient only to stretch, and not to tear down, adhesions. In all his experience he has never met with any peritonitis worth mentioning, or any exudation or hæmorrhage as the result of his manipulation. He has always kept in mind that abdominal section might have to be resorted to after the treatment by manipulation of the adhesion, but it never has been necessary. In order to be successful the operator must have a large experience in dealing with such adhesions, and must be endowed with a very delicate sense of touch. The point is emphasised that this method does not aim at forcible reposition, which it condemns, but purely at loosening of adhesions through careful bimanual stretching. The uterus and ovaries are thus freed and made movable.

ALCOHOL IN HIGH LATITUDES.

General A. W. Greely, U.S.A., in the August number of the *Forum*, relates his and his companions' experience with alcohol during the time passed by them in the extreme north on the notable Lady Franklin Bay expedition. He writes:—"The use of rum during the boat retreat appeared to be most beneficial when given to the men just after the day's work was over and before they entered their sleeping bags. Before reaction came the men received hot food. Everyone, who could, avoided drinking the rum until he had entered his bag. . . . These special issues of rum either in the field or during the retreat rarely exceeded half a gill at a time. . . . Later, when the party had been slowly starving for many months, and when the supply of food was so diminished as to necessitate a greater reduction of rations, the pure alcohol on hand was issued as food, being diluted by about three times its own weight of water—each man receiving two drachms daily. The general impression, with which I most heartily agreed, was that the alcohol supplemented food and had a decided alimentary value. There could be no question of its beneficial effects as a mental stimulus to every member of the party under our unfortunate condition at Sabine.—*St. Louis' Courier of Medicine*, September, 1887.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—Robert M'Donnell, M.D., F.R.S.
General Secretary—W. Thomson, M.D.

SECTION OF OBSTETRICS.

President—John Rutherfoord Kirkpatrick, M.D., Univ. Dubl.; F.K.Q.C.P.
Sectional Secretary—Andrew J. Horne, F.K.Q.C.P.

Friday, November 25, 1887.

The President in the Chair.

Exhibitions.

Dr. Atthill exhibited a specimen of a suppurating ovarian cyst. It was taken from a lady, aged thirty-five, who enjoyed excellent health till about two months ago, when she got cold and had a sharp attack of peritonitis. During this her medical attendant detected a tumour in her abdomen. He (Dr. Atthill) saw her in consultation, and found the tumour excessively hard and nodulated, but that it could apparently be separated from the uterus. The operation was a very simple one. The tumour was found to be multilocular; and on the largest of the cysts being tapped the tumour was pressed out without difficulty through a small opening in the abdomen. He was then surprised to find that it was attached to the uterus through a rather short and thick pedicle. A secondary cyst—the one exhibited—was then discovered, which, on being tapped, was found to contain pus. One interesting point about this cyst was its shape, which was quite different from anything that he had seen. A second remarkable circumstance about the case was

that, notwithstanding this suppurating cyst, the lady had apparently nothing whatever wrong with her, having perfectly recovered from the peritonitis.

Mr. A. J. Horne exhibited a placental cyst. It came from a patient, aged twenty-eight, who was in the ninth month of her fourth pregnancy. He was called in to see her for a sero-sanguineous discharge. Her features were extremely pallid, and her pulse exceedingly rapid and small. She complained of intense pain in the abdomen. On external examination he was struck with the irregular appearance of the abdomen, particularly at the left hypochondriac region, where there was a distinct bulging of the uterus. On palpation it was impossible to discover the small parts of the fœtus, the uterus felt so tense and firm. On making a per vaginam examination he found that he could only reach the presenting head by laying the patient on her back. The membranes were tightly stretched over the head, and there was no appearance of liquor amnii. Thinking that there was internal hæmorrhage, he was very cautious about rupturing membranes; and as the sero-sanguineous discharge was very slight, though it caused her some anxiety, he stopped it by a small antiseptic plug in the vagina. She had no labour pains until the next morning at eleven o'clock, when they came on, and she was delivered of a still-born child. Immediately after the expulsion of the placenta huge clots the size of the placenta were expelled. She remained in a very anxious state for a couple of hours in consequence of extreme loss of blood, although previous to her labour the loss of blood had been very slight. On examining the placenta he found in the centre of it, close to the insertion of the cord, the huge cyst now exhibited, the weight of which, acting downwards like a suction pump, might, he thought, have been the cause of the hæmorrhage.

Dr. Macan exhibited three ovarian cysts; one was an exceptional case, and on removing it he had taken away both ovaries. This tumour was almost universally adherent, and the omentum was adherent to a portion of it.

Dr. Atthill said it did not follow that because a cyst, the size of a pea or a bean, existed in the neighbourhood of an ovary it would give trouble. He was not in favour of removing part of an ovary.

Uterine Hæmorrhage of Five Years' Standing, caused by an Enlarged and Cystic Ovary; Removal of Ovary; Recovery.

Dr. M'Mordie exhibited the following case of an enlarged and cystic ovary:—L. S., aged twenty-six, single, was admitted to the Samaritan Hospital for Women, Belfast, on July 27th, of the present year. The history of her case is very shortly and concisely given in a letter from Dr. Leeper, of Loughgall, written at the time of her admission:—

"A young woman, living on the shores of Lough Neagh, has been

suffering for many years from uterine hæmorrhage, and has been in the County Infirmary for three months, as well as under the doctor of the district in Portadown."

When I first saw her she complained of pain in the right ovarian and hypogastric regions, and also in the lower back. Her general symptoms were those usually caused by a prolonged and excessive loss of blood. A careful examination of the uterus revealed nothing to account for the constant oozing of blood from the os uteri. There was no tenderness on pressure, neither was there enlargement, displacement, or endometritis. The right ovary felt enlarged, and there was tenderness upon pressure.

I had no doubt everything had been done, so far as local and general treatment was concerned, that could by any possibility effect a cure of the hæmorrhage.

I, therefore, advised removal of one or both ovaries, as the only means of effecting a cure. In this opinion Dr. Leeper concurred. The nature of the operation having been fully explained to the girl and her mother, they gave their consent.

Laparotomy, Aug. 2.—I removed the right ovary, which I now exhibit. I did not remove the left ovary, as it appeared to be healthy. The girl made an excellent recovery. The hæmorrhage ceased in about ten days after the operation, and she is now in the enjoyment of perfect health.

To make certain that the recovery was permanent, I kept her in hospital till the middle of October, when she returned home.

A few days ago, I wrote to Dr. Leeper and asked him to report upon the case. He replied as follows :—

"Loughgall, *Nov.* 23rd, 1887.

"Dear Dr. M'Mordie,

"In reply to your letter, regarding the girl, Lizzie S., I have pleasure in stating that you have accomplished a most complete cure in her case. I have examined her carefully since her return home, and I am satisfied nothing can be more complete or successful. She has no longer the hæmorrhagic attacks which had so drained her as to reduce her to the lowest state before the operation. . . . She would never have been cured but for the removal of the ovary."

I think I have established a claim to have this case considered unique, and of unusual interest. The cure was effected solely by the removal of the diseased organ. The uterus received no local treatment whatever. Before leaving hospital she had one regular menstrual period.

Dr. Macan said the principal question was how hæmorrhage could be diagnosticated as proceeding from an enlarged ovary. He had known a great many cases in which there were ovaries as much enlarged as the one before them, and yet he had hesitated to expose the patient to the

dangers of abdominal section, because he was not certain that the enlargement of the ovary was the cause of the pains of which the woman complained. The present case, however, made him more willing to remove such ovaries than he would otherwise have been. The difficulty was to connect pains or hæmorrhage absolutely with an enlarged ovary.

Dr. Atthill said that, according to his experience, enlarged ovaries and ovarian cysts were not the cause of profuse menstruation, but rather the reverse. Why an ovary in such a condition as that now shown should have given rise to such profuse hæmorrhage was to him somewhat of a mystery.

Dr. W. J. Smyly said that, in the majority of cases, ovarian tumours did not lead to hæmorrhage. The occurrence of hæmorrhage depended partly on the nature of the tumour and partly on its site. If it developed between the layers of the broad ligament it would give rise to hæmorrhage from congestion. The present tumour was, he thought, an example of dropsy of the Graafian follicles.

The President remarked that if the ovaries in their normal state excited menstruation he did not see why, when diseased and enlarged, they should not set up menorrhagia. The removal of a diseased ovary would divert the menstruation to the healthy ovary and cause it to become normal.

Dr. M'Mordie, in reply, remarked that ovaries in which the diseased enlargement was but small, often gave more trouble than those in which the cysts were large.

Pudendal Hæmatocele.

The Secretary read a paper by Dr. Purefoy (who was unavoidably absent) on pudendal hæmatocele, which was cured by the application of cold.

The President observed that when such hæmatoceles occurred previous to delivery they might completely obstruct the progress of labour. He remembered a case of this sort in which the tumour was as large as the fœtal head and completely occluded the orifice of the vagina.

Dr. Mason said he remembered two cases of this kind. In one of them a large tumour extended up the vagina and so completely occluded the urethra that water was with difficulty passed by means of a catheter, and there was no passage of anything through the rectum for ten days.

Dr. Macan said that in a case of this affection he discovered a large cavity between the rectum and the vagina; and the conclusion at which he arrived was that a hæmatocele had caused a dissection of the space mentioned and then burst and left the cavity behind.

Mr. Lane mentioned another case, which ruptured. The treatment adopted consisted of perfect cleanliness and dusting the cavity with iodoform powder. The woman recovered.

Dr. Atthill said that these cases were very alarming to look at, but according to his experience the majority of them did very well.

The Section then adjourned.

SECTION OF SURGERY.

President—A. H. Corley, M.D., President of the Royal College of Surgeons, Ireland.

Sectional Secretary—W. Thornley Stoker, F.R.C.S.I.

Friday, December 9th, 1887.

The President in the Chair.

Penetrating Wound of Stomach and Transverse Meso-colon successfully treated by Abdominal Section.

Dr. Charles Ball brought forward the case of a boy, aged fifteen years, who was admitted into Sir Patrick Dun's Hospital on March 29th, 1887, immediately after having accidentally stabbed himself with a half-inch chisel in the abdomen.

The accident was stated to have occurred in the following way:—He was pushing a chisel into a handle, and for this purpose he held the blade with both hands, with the cutting edge towards his abdomen, and firmly pressed the handle against a wall. His hands slipped, and the blade perforated his abdomen about half way between the tip of the ensiform cartilage and the umbilicus, and above a quarter inch to the right side of the linea alba. When admitted he was somewhat collapsed, but otherwise there was no indication at the time of serious internal injury. The collapse, however, became more marked, and two and a half hours after the injury he vomited part of the contents of his stomach stained with blood. The vomiting became frequent and the quantity of blood considerable. Dr. Ball saw him four hours after the injury; he was then profoundly collapsed; he vomited blood at frequent intervals, and at each effort to vomit a stream of blood spurted out at the abdominal wound. The whole abdomen was dull upon percussion, obviously due to the peritoneum being filled with blood.

An incision about three inches long was made in the middle line, between the ensiform cartilage and the umbilicus, and the chisel wound connected with it. As soon as the peritoneum was opened a considerable quantity of blood gushed out. The stomach was found to be wounded. A clean cut existed in the great curvature, about half an inch in length; it was not bleeding. The mucous membrane, though perforated, was not prolapsed, and none of the contents of the stomach were found extravasated. The wound was sutured by passing a fine catgut suture,

after the method of Lembert (but continuous), four times across the wound, only including the serous membrane; the ends were then tightly tied, thus absolutely closing the opening, and at the same time puckering up the serous membrane and bringing a considerable area on each side of the wound into apposition. The omentum was reflected upwards and search made for other wounds, as copious bleeding continued. An opening in the transverse meso-colon, near its spinal attachment, could be felt with the finger; and upon sponging away the blood it was found that a large vein was wounded, to which, with some little difficulty, a catgut ligature was applied. The patient vomited shortly after the operation, but the vomit was devoid of blood. He was allowed nothing by the mouth except small pieces of ice for six days, and was fed by nutrient enemata of artificially-digested food. From the 6th to the 14th day he was allowed gradually-increasing quantities of beef-tea and milk, and he then was allowed solid food. On the third day he vomited some pieces of onion, quite unchanged, which he stated he had eaten the morning of the accident. Four weeks after the operation he was discharged from hospital quite well.

The single wound in the stomach was accounted for by the suggestion that it had been made with the angle and not with the full cutting edge of the chisel; and it was thought that the instrument, after wounding the stomach, passed through the great omentum and thence through the meso-colon. In this case the great danger arose from the large vein wounded, and but for the timely intervention of surgery would have proved fatal by hæmorrhage in a very short time.

The PRESIDENT pointed out that Prof. Otis, writing on the surgery of the great American War, had emphasised the necessity of opening the abdomen in cases of gunshot wounds, while he disparaged the old method as ostrich surgery. Dr. Ball had shown that the bolder plan of facing the enemy was the better, and he deserved praise for having the intelligence to conceive and the courage to carry out the operation.

MR. HEUSTON was unable to understand certain points of Dr. Ball's communication in reference to the visceral injuries recorded, as from Dr. Ball's description it would appear that the only parts injured were the anterior surface of the stomach in the region of the pylorus and the transverse meso-colon. From the relative positions of the abdominal wound and the stomach injury, the chisel must have passed in a direction backwards and to the left. Assuming that to be the case, he could not possibly understand how the only other injury was to the transverse meso-colon, since to reach the transverse meso-colon it was absolutely necessary that the chisel, unless it pierced the posterior as well as the anterior gastric wall, after causing the stomach injury, should pass through the great omentum between the stomach and transverse colon, thus obtaining entrance into the lesser sac of the peritoneum.

Dr. Atthill, adverting to the vomiting, said he had seen the same after ovariotomy. No food had been taken before the operation, but food taken after the operation had been rejected perfectly undigested after the lapse of some hours. This phenomenon he attributed rather to paralysis of the stomach from the anæsthetic than to the effect of the injury. Hence there might be the two causes instead of the injury alone.

Dr. Ball replied. Mr. Heuston's criticism showed he had not been sufficiently explicit. As soon as the abdomen was opened the first thing found was the wound in the stomach, which was sutured up. Then the omentum was reflected, and he searched through the coils of small intestine to see whether any of them had been wounded. The descending layer of the transverse meso-colon attracted his attention when feeling over the surface, and in it he felt the opening. The moment he put a sponge down upon it there was a great gush of blood. To his colleagues and himself it occurred that the blood was coming from the vena cava it was so free. The chisel, he believed, reached the transverse meso-colon by perforating the great omentum; but he did not see any wound. As regards Dr. Atthill's theory, if the rejection of food was simply due to the anæsthetic, why did it not occur consequent on other operations in which the abdominal cavity was not opened?

Foreign Body in the Œsophagus.

Mr. Thomson read a paper on two cases of foreign body in the œsophagus. In one the patient tried to swallow a quarter pound of beef, and was brought in dead. In the second the patient felt a piece of beef stick in the œsophagus, when he went to a hospital and had a tube introduced. He went home; suffered much pain; the neck and face became emphysematous. He was admitted to the Richmond Hospital suffering from dyspnœa and dysphagia. An attempt to explore brought on such a spasm that it was necessary to desist. Later in the day tracheotomy was done with great relief. It was determined to explore the œsophagus subsequently, but next morning the patient said the lump had passed down, and that he was able to swallow freely. He died that night. Opposite the cricoid cartilage the œsophagus was transfixed by a bone, which passed forwards at the left of the trachea for a quarter of an inch. The posterior end also transfixed the œsophagus, making a rent through which fluids passed freely into the posterior mediastinum. A piece of beef two inches long hung from the bone like a morbid preparation in a jar. Mr. Thomson discussed the treatment in such cases, and pointed out the great necessity of delicate manipulation in exploring the œsophagus.

Mr. Tobin had had a similar case under his care in St. Vincent's Hospital. A woman, aged fifty-seven, was admitted, having a few days before swallowed a piece of meat and bone. She could not swallow

fluids. He passed an instrument the size of No. 10 catheter beyond the body without stirring it. Having considered the desirability of performing œsophagotomy, he determined to postpone it to next morning. Then he proceeded to remove the body through an incision in the œsophagus. It was the first occasion he performed the operation, and he was surprised at the ease with which it could be done. He found a quantity of pus. He then made an incision, and removed a large triangular bit of bone. The wound he left open without a single stitch, but inserting two drainage tubes. This operation was done the fourth day after the accident, and the patient was put to bed. The œsophagus having been subjected to a good deal of handling, he let it rest two or three days, and fed the patient with enemata. She seemed to do well, but her strength was not sustained. He passed an instrument through the mouth and œsophagus, which she resented, and he thus introduced food, some of which, however, escaped through the wound. She would not allow the food to be introduced that way again, and so he had to fall back upon the enemata for two days. Her strength failing, he gave her chloroform for the double purpose of passing the tube to introduce food, and in order to thoroughly drain the wound. Having accomplished his purpose, he left the tube in the œsophagus, but its presence set up dyspnœa, and she became worse. Hence, he removed the tube from the mouth, and determined to pass a tube through the wound into the stomach, selecting for the purpose one of the long catheters used in disease of the prostrate. The turn on the end of the catheter facilitated its entrance, and it reached into the stomach. He left it there, the respiration increasing 10 per minute. On the sixth day after the operation she died, partly from exhaustion and want of food and partly from dyspnœa due to the extravasation of pus and fluids, and perhaps from septicæmia, which the pus and fluids set up. His experience of the case suggested that where there was a history of an angular body impacted in the pharynx, he should have instruments both to perform œsophagotomy and to remove the body through the mouth, and he would feed the patient through the wound in the œsophagus instead of through the mouth. The danger of matter forming between the œsophagus and the trachea, and of fluids given as food extravasating into the sac encouraged early operation.

Mr. Wheeler said he had performed pharyngotomy four times with perfect success, and the fourth (which was the only one resembling Mr. Thomson's) was for a fish bone. In his own cases he had not found it necessary to feed the patients by means of a tube. He fed them by means of enemata, and with gruel, milk, and broth by a spoon. They did not suffer much from weakness. He agreed with Mr. Tobin in not stitching the œsophagus. Having made incisions in the skin for the purpose, he found it easy to retain the drainage tubes. As Mr. Tobin remarked, the operation was easy where there was such a guide as a large

foreign body in the pharynx bulging out, but without such a guide it was not an operation of simplicity. The question of tracheotomy depended upon the condition of the patient. In Mr. Thomson's case, the time for operation had passed when he saw the man.

Mr. Myles said the case was treated in Jervis-street Hospital, and the resident pupil assured him the man had no difficulty in breathing, and he swallowed water. There was a violent spasm when the tube was passed, and the man was given the option of going or remaining. He promised to come back if there were any symptoms of dyspnœa.

The President said Mr. Thomson did not suggest there was any want of skill, nor did he mention the hospital. Moreover, there were authenticated cases where women imagined they had swallowed things. Indeed, Dr. Lennox Browne said that only in 4 per cent. of reported bone-swallowing was there any real foundation for the statement. The explanation was that a small bone going down and lacerating the pharynx left the impression that a bone was there.

Sir William Stokes said that in Mr. Thomson's case the foreign body impacted did not serve as a guide. Had Mr. Thomson ascertained its existence, no doubt the attempt to remove it by œsophagotomy would have been attempted; but there was an enormous tumefaction of the neck which concealed all evidence of projection of the œsophagus, due to the extravasation of air and fluids into the tissues in the efforts at deglutition. Another embarrassing circumstance was, that after the tracheotomy was performed, the condition of the man was so immensely improved, and he got such immediate relief, not merely as regards respiration, but also power of deglutition. The man expressed himself able to swallow with ease, and the conclusion arrived at was that if the foreign body had been there at all, it had passed down.

Dr. Gunn did not think it had been clearly shown from the relative position of the bone in the meat transfixing the œsophagus, why the lump of meat did not go down into the stomach.

Mr. Lentaigne mentioned the case of a man in Jervis-street Hospital. In eating a rabbit, portion of the leg-bone stuck in his throat. He suffered from no dyspnœa, but felt great pain at the neck. Passing a horse-hair probang, it entered either in front or behind the bone, and pulling it two or three times to dilate the œsophagus, out came the bone.

Mr. Patrick Molony said he was Resident in Jervis-street Hospital when Mr. Thomson's patient presented himself, stating he had swallowed a soft piece of meat. He endeavoured to pass a probang, but on account of the violent spasms of the glottis he had to desist. The patient drank water freely, and complained of no uneasiness except a tickling sensation of the throat. Having offered him a choice of remaining, he said he lived near at hand and would go home, promising to come back if untoward symptoms occurred.

Mr. W. Thornley Stoker pointed out that the sensation of the patient as to the situation of an obstruction were not reliable, and instanced the reference of pain to a point remote from its actual situation, in diseases both of the œsophagus and urethra.

Mr. Thomson, replying, said nobody had dissented from the line of treatment followed. As regards Mr. Wheeler's observation, if he had felt the bone, he should have performed œsophagotomy; but as Sir William Stokes had pointed out, the neck was greatly tumefied and swollen, and even if the operation was performed, the patient could not have recovered. They had not yet devised means of evacuating foreign fluids from the posterior mediastinum. He had not only scrupulously avoided naming the hospital where the man was first treated, but he stated he did not think the least blame was to be attached to whomsoever it was who treated him. Any interference with the bone must have driven it through the œsophagus. The meat was attached to the bone, which kept it suspended, transfixing the œsophagus, so that it was impossible for it to go down.

The Section adjourned.

SECTION OF PATHOLOGY.

President—C. B. Ball, M.D.
Secretary—J. B. Story, F.R.C.S.I.

Friday, January 13, 1888.

The President in the Chair.

Outbreak of Dysentary.

Mr. Conolly Norman, by the desire of the Section, made a communication as to the cause of the outbreak of dysentery with which he had to deal. Having briefly glanced at the history of other epidemics of that disease, and discussed the question of diet and the influence of insanity as a factor, Mr. Norman stated his belief that the dysentery which existed in the asylum under his charge was due to defective drainage, and laid down the following as probable general laws that regulate the appearance of dysentery:—1. Dysentery is communicated through exhalations from a soil saturated with the products of organic decomposition. 2. The incidence of dysentery at particular times and seasons is due to the increased moisture of the soil at such times. When dysentery breaks out there is commonly a concurrent outbreak of severe diarrhœa. 4. Dysentery appears where dysentery has been before. 5. When dysentery appears over a large area, including its own haunt, it appears in the

latter situation in its worst form and to the greatest extent. 6. Like other malarial affections, dysentery attacks by preference those who are not acclimatised to the conditions that have produced it.

Mr. Frazer believed that dysentery was and could be contagious, for he remembered making a *post mortem* in the Richmond Hospital from which he got a most severe attack of dysentery which nearly cost him his life, and which he believed to have been produced by contagion. He was not satisfied with Mr. Conolly Norman's observations upon malaria. From the most remote times dysentery had been epidemic in Ireland. In the battles during the reign of Elizabeth the soldiers were decimated by it; the same thing occurred during the wars of Cromwell and William the Third; and yet Ireland had always been remarkably free from malaria. They had never had ague in this country. But that dysentery might be associated with malaria, on the other hand, was possible. Malaria, as such, was confined to very limited districts in Ireland. He knew that it existed along the Dublin river, and could put his finger upon the spots where it occurred; but there had been no co-existence of dysentery in those spots. Another remarkable fact was that it occurred at certain seasons of the year. It was well known to break out in autumn, especially after the first frosts, which was accounted for in former times by persons drinking water containing animal and vegetable material in a state of decay. As for its mortality, he was Resident in the hospital during the years 1847, 1848, and 1849, and had to attend specially upon fever and dysentery; and the mortality in cases of dysentery—of which only the very bad were admitted—was three times as great as in the worst fever cases. It amounted at one period to one out of every four cases. Dr. Cheyne used the remarkable expression that dysentery was "fever turned in on the bowels." His preparations illustrative of the disease were in the Richmond Hospital, and were described in the Dublin Hospital Reports.

Mr. Norman, in reply, said he had, in order to economise time, omitted to read from his paper the following sentence:—"There is reason to disbelieve that dysentery, like other diseases of its class, assumes, or simulates now and then, a contagious form." Dr. Cheyne had argued strongly that many cases of undoubted contagion had occurred during the epidemic of dysentery which he treated. He mentioned that one of his assistants, who was very assiduous in connection with the making of *post-mortem* examinations, and also several nurses, were contagiously affected. As to the absence of malaria in Ireland, he was not sufficiently learned in the history of Irish epidemics to be able to say much about it; but there was strong reason to believe that the "country fever" described by seventeenth-century writers, to whose accounts Mr. Frazer had referred, was a malarial fever. It carried off a number of well-known men, including General Ireton; and whilst it raged amongst the troops at

war on both sides during those days, dysentery was also very prevalent. As to the disease arising from the water used, that question could not arise in reference to the epidemic in the Richmond Asylum, for that institution was supplied from the Vartry. The mode of water storage there was not quite perfect; but he had frequently had the water analysed, and had never received any report detrimental to its character. As regarded mortality his results had been more favourable than he had hoped for, having regard to other epidemics in this country and in England. Out of 147 persons who up to the end of last year were attacked with dysentery during the fifteen months that he had charge of the Richmond, there were only twenty-three deaths. The proportion of deaths at Carlisle under Dr. Clouston was one in three; and according to the statistics of Norman the proportion at Colney-Hatch and at Bodmin Asylum was also one in three. The proportion during the epidemic of which Dr. Cheyne wrote was not clearly stated, but it must have been high when he had thirty-three *post-mortem* examinations during one winter session.

Case of Cerebro-Spinal Disease.

Mr. Bernard, F.K.Q.C.P., of Londonderry, read a paper upon an obscure case of cerebro-spinal disease, and exhibited microscopic sections of portions of the spinal cord and central nervous system. The case in some points resembled one of insular sclerosis.

The President said the Section were much indebted to Mr. Bernard for having taken the trouble of coming up to Dublin to communicate this rare case to the Academy. He hoped his example would be followed by other gentlemen throughout the country.

Professor Purser said three specimens taken from the subject of the case had been submitted to him by Mr. Bernard. The first was a section of the upper part of the medulla oblongata, and he had been unable to satisfy himself that there was any sclerosis in it. There was a spot in the centre which appeared unstained; but that might have been owing to a defect in the staining. Another spot looked somewhat as if the nerve tissue had gone, and had been replaced by connective tissue. Another specimen was from the middle part of the cervical spinal cord, and the anterior cornu on one side of this had disappeared. He could not satisfy himself that there was any increase of connective tissue; it looked more like atrophy. The third specimen was a section of the optic nerve, and in this there was an accumulation in some places of round cells, which seemed to indicate neuritis to be the pathological expression of the optic neuritis which Mr. Bernard saw. He (Professer Purser) thought the case admitted of a good deal of discussion.

Dr. Finny said it struck him as remarkable that many appearances that one was accustomed to see in sclerosis were absent in this patient.

A remarkable feature was the very rapid progress of the case. Cases of insular sclerosis were usually very slow, running over several years; it was also remarkable that the patient was so young—under twenty years of age. Another point was the early loss of control over the bladder and rectum, which preceded the nystagmus and perversions of the eye. The case was full of clinical puzzles, and if a *post mortem* had not cleared it up, one would have supposed that is was a case of mere acute myelitis. He (Dr. Finny) did not catch in what part of the brain the patches were found in the greatest number; nor whether the microscopic examination showed the ordinary hard sand-coloured appearances that they often saw in cases of the disease in question. He took the case to be one of cerebro-spinal sclerosis, in which the hardening existed in both brain and spinal cord.

Mr. Bernard, in reply, said he looked entirely to Professor Purser for the exact nature of the disease. There was evidently atrophy of the left cornua of the lower cervical vertebra.

Suicidal Wound of the Heart with a Pin.

Mr. William Thomson communicated a case of suicidal wound of the heart with a pin:—The deceased was admitted to the Richmond Hospital, but was found to be dead. He had been arrested as a lunatic running about the street in his shirt. On examination of the body, the head of a pin was discovered in the fifth intercostal space, two and a half inches from the nipple—downwards and inwards. The pin had traversed the pericardium, and wounded the anterior wall of the left ventricle. The pericardium contained seventeen and a half ounces of bloody fluid, and there was a small rent in the wall a quarter of an inch in diameter, which was filled by blood clot. The surface of the ventricle in contact with the pin was torn to the extent of nearly an inch; a small vein was also wounded; all the internal organs were congested; the urine was albuminous. Mr. Thomson referred to several cases of a similar character.

The Chairman (Professor Bennett) asked was there anything to fix the date of the introduction of the needle in Mr. Thomson's case.

Dr. Foot said the case of Admiral Villeneuve, who commanded the French fleet at Trafalgar, was a remarkable one of suicide by a pin driven into the heart. He was defeated, taken prisoner, and brought to England, but after a couple months was released. He then went to Rheims, in France, and sent a letter through the Minister of Marine to inform Napoleon that he was again on French soil. He had been in low spirits from his defeat; he had been before reprimanded by Napoleon for inefficiency, and, not getting an answer to his letter, resolved on suicide; and after four days was found dead in his room. It appeared that he found out the region of the heart by means of anatomical plates; and when he was found dead a long needle was discovered sticking into his heart. A case came under his (Dr. Foot's) notice of a child into whose

heart a needle went from its mother's dress as she was clasping it to her breast. She immediately ran with the child to the Meath Hospital, and was in a much greater state of commotion, when he saw them, than the child was. He distinctly saw the oscillations of the needle caused by the action of the heart, and drew it out with a rotatory motion, in order to lessen the chance of hæmorrhage. The woman brought the child to him next day, but nothing further happened. In Warsaw the latest treatment for cholera was puncturing the heart with a needle to stir up vitality.

Mr. Foy mentioned a case of a nobleman of Turin—a courtier of King Amadeos—who was killed while asleep by his wife, who drove a golden needle into his chest at a spot ascertained from anatomical plates to be over the heart. Fischer collected 453 cases of wounds of this sort, in the majority of which death resulted from the pericardium becoming filled with blood. In a case of Dr. Moxon's, exhibited before the Clinical Society, a large pin was seen sticking in the chest of the patient, and moving with each motion of the heart, but apparently causing no trouble whatever to the patient. In another case a knitting-needle, shot from a toy-pistol, perforated the right ventricle of a boy's heart, went into the auricle, and transfixed the valves, and yet the boy lived for a considerable time. In another case a boy lived for five weeks after his heart had been pierced by a wooden peg three inches long. In the case of the woman who drove the thirty needles into herself, death resulted from a wound inflicted by only one of them upon the superior vena cava. In another case a pin found its way into the thoracic duct, and the patient bled to death. A most remarkable case was that of a medical student, who, while "on a spree," passed some pins into his heart. His pericardium was opened, and the head of a pin was found outside the wall of the right ventricle. It was grasped, and a slight incision was made in the ventricle to facilitate its removal; but the systolic action of the heart carried it in, and the pin was still in the young man's ventricle, and occasioned him no trouble. Sir Robert Christison recorded a case of a man wounded by a bullet, which found its way into the right ventricle of his heart, and it remained there for two years, occasioning him no trouble, and he eventually died of pleurisy.

Dr. Finny said these cases showed how tolerant the heart was of injury, provided certain portions of it were not injured. The walls of the heart were tolerant of injury so long as there was no hæmorrhage to stifle the heart's action. But there were cases of death immediately occurring from very small injuries to the nervous ganglia.

Mr. Frazer said that amongst the Japanese puncturing of the heart was a primitive mode of treatment for the cure of certain affections. He had a note of a *post mortem*, made while he was a student, in which he found a needle an inch and a half long in the surface of the heart, inside the pericardium, the surface of it being covered with old lymph.

Dr. Walter Smith mentioned a case of suicide which came within his knowledge. It was a young lady in whom he saw symptoms of derangement, and warned her mother of them. She became afflicted with profound melancholia, and her mother sent her to an asylum in Wales. On her way there, while walking with a keeper round the cliffs of Penmaenmawr, she tried to throw herself on the railway, but the keeper prevented it. Then she made an attempt to gouge out one of her eyes with the end of her umbrella. She was brought to the asylum, and told them there that she would kill herself in spite of them, and she did. One day while two nurses were in the room with her, she drove a hairpin, which she had secreted, into her abdomen through the umbilicus, uttering no sound whatever, or expression of pain. She told the superintendent next day that "she had done it." He looked at her abdomen, saw no mark, and disbelieved her; but symptoms of peritonitis soon appeared, and she died, and on a *post mortem* the hairpin was found lying amongst the coils of the intestine.

Mr. Molony mentioned a case of a person who attempted suicide by working a hole in the abdominal wall, about an inch on the left side of the umbilicus, with the end of a lucifer match.

Mr. Cox gave a case of a man who, while suffering from *delirium tremens* in an asylum, wounded himself over the heart and in the arm with the sharpened end of a spoon.

Mr. Thomson briefly replied.

Multiple Abscesses of the Liver and Lungs.

Dr. Finny exhibited specimens illustrating pyæmic multiple abscesses of the liver and lungs, which had run a rapid course of about ten days, and in which jaundice and the expectoration of pus had occurred but five days before death.

The patient, who had been admitted under Dr. Finny's care into Sir Patrick Dun's Hospital on Nov. 16, 1887, gave a history of having been treated for pain and suffering referred to the left side of the abdomen, over four years previously, and of the question being discussed as to the existence at that time of cancer of the stomach. Since then he has had frequent attacks of constipation and fæcal accumulation. While in hospital he had one of these attacks of pain and constipation, and for about a week there was no motion without the aid of large enemata and strong aperients—the alvine discharges pointing to their having lodged in the bowel for a considerable time. For the next ten days the febrile symptoms of enteritis were present, and in the region of the left hypochondrium there was much tenderness on handling, and dulness on percussion. As the splenic dulness seemed to be continuous with it, it was considered to be due to an enlarged and tender spleen. On Dec. 15th slight jaundice was noticed in the urine and skin—which afterwards was

moderately pronounced—and at the same time the patient expectorated some sanguineo-purulent matter, which became each day more distinctly purulent; the quantity of sputum was never very much. Beyond isolated spots of mucous râles throughout both lungs, no other evidences of lung disease were present.

From Dec. 15th to 21st, when death occurred, the symptoms were—delirium, rapidity of the pulse, a high range of temperature, perspirations during sleep, and failing strength and appetite. At no time was there found in the urine either albumen or indigo. The *post-mortem* appearances are as follows:—In the situation to which pain had been referred, there was found an abscess, shut in by firm and old adhesions of the peritoneum, and limited by the left kidney, the lower third of the spleen, the tail of the pancreas, and the superior surface of the splenic flexure of the colon. The abscess contained a couple of ounces of grumous, cheesy matter. Its wall was intimately adherent to, and incorporated with the kidney, but the abscess had not invaded or opened into the gland, but into the spleen at its lower part a small track could be traced, and a communication was made out with an abscess in its substance of the size of a small bean.

The liver was much enlarged, and was dotted over—particularly in its under-surface—with numerous yellow spots, some alone and some in clusters of six or seven. Many were elevated, varying in size from that of the head of a large pin to a split pea. Similar spots were found all through the substance of the organ. On section they were yellow and purulent, without any marked hyperæmia in the tissue around. A similar abscess was found in the left hepatic duct. A moderate amount of recent perihepatitis was visible in the fissure of the liver, and while the cystic duct was narrowed, there was no obstruction to the hepatic ducts.

The stomach was healthy, while the gastro-hepatic omentum exhibited old adhesions and thickening round the duodenum.

The lungs were emphysematous, and on section were studded, and especially the right one, with circumscribed small abscesses, containing pus of exactly the characters of the sputa.

The glands, retroperitoneal and mediastinal, were somewhat enlarged and reddened, but contained no pus.

The brain was free from all disease.

Remarks.—The points of interest were (1), the long duration—over four years—which had elapsed between the primary inflammation of the peritoneum and its subsequent conversion into an abscess; and, as a corollary to this, the danger—remote as well as immediate—attendant on peritoneal inflammations; (2), the mode by which the secondary abscesses of the liver and lungs were developed—viz., by the pus directly entering the portal circulation through the communication with the spleen, and thence again by the hepatic veins it was carried into the lungs; and (3),

the short time which elapsed between the direct infection of the blood and the occurrence of lung abscesses—a period which may be set down as under five days; (4), the formation of the multiple abscesses was embolic in its nature, and accounted for the number and small size of the hepatic abscesses.

Dr. Walter Smith asked what were the specimens kept in. The case confirmed what had been laid down—namely, that the jaundice and fever, and the severe nervous symptoms that had been observed in it, were sufficient to enable them—excluding the rare instance of acute phosphoric poisoning—to diagnosticate pyæmic abscesses of the liver. A case occurred in the Adelaide Hospital, a few years ago, of a woman, aged forty-five, who had jaundice accompanied with fever, became delirious, and died a few days after; and, although there was no external source, or history of pyæmic affection, a diagnosis of such abscesses was made with considerable certainty during her life, and was confirmed by an autopsy; for numerous multiple pyæmic abscesses were found scattered through her liver, kidneys, and lungs. These multiple abscesses were the only ones that were seen in this country; there was a singular paucity in Irish records of any other kind.

Dr. Finny, in reply, said both specimens were put into the same solution. In reported cases in which the abscesses of the liver were larger he suspected that the individuals lived longer, and the affection was confined to the liver. In the cases recorded of Murchison, one feature was the rarity of open ulcers of the mucous membrane being followed by abscesses of the liver, while they were present in the gall bladder, or in structures deeper than the mucous membrane.

The Section then adjourned.

TREATMENT OF TYPHOID FEVER.

In the course of a lecture on the treatment of typhoid (*Journal of the American Medical Association*) by Dr. Hermann von Ziemssen, he states:—"In patients treated antipyretically you have seen after the bath often marked reduction of temperature, moderation of the pulse and respiratory movements, restful sleep, and, especially, immediately after the bath, free sensorium, clear vision, a fresh countenance, greater muscular strength, a longing for food." As diet he recommends milk and meat juice prepared by pressing cut pieces of beef in a meat press (Renlaux's). The juice which escapes from the press consists of serum, lymph, and blood. "It does not cause the slightest digestive troubles, such as eructation, gastric oppression, or flatulence."

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, B.A., M.D., Univ. Dubl.; F.K.Q.C.P.; F. R. Met. Soc.; Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

Vital Statistics

For four Weeks ending Saturday, February 25, 1888.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000:—

Towns	Weeks ending				Towns	Weeks ending			
	Feb. 4.	Feb. 11.	Feb. 18.	Feb. 25.		Feb. 4.	Feb. 11.	Feb. 18.	Feb. 25.
Armagh -	15·5	15·5	36·1	10·3	Limerick -	31·0	29·7	47·2	53·9
Belfast -	34·2	32·6	28·5	35·1	Lisburn -	14·5	9.7	24·2	24·2
Cork -	40·2	33·1	26·0	29·2	Londonderry	7·1	16·0	44·6	21·4
Drogheda	12·7	8·5	93·0	25·4	Lurgan -	30·8	71·8	25·7	46·2
Dublin -	29·1	29·2	25·3	27·5	Newry -	35·1	45·7	21·1	21·1
Dundalk -	17·5	21·8	17·5	74·2	Sligo -	14·4	19·2	19·2	24·1
Galway -	26·9	26·9	20·2	26·9	Waterford -	20·8	23·2	30·1	34·7
Kilkenny	29·6	8·5	12·7	16·9	Wexford -	8·6	38·5	12·8	34·2

In the week ending Saturday, February 4, 1888, the mortality in twenty-eight large English towns, including London (in which the rate was 23·1), was equal to an average annual death-rate of 21·9 per 1,000 persons living. In Glasgow the rate was 26·1; and in Edinburgh it was 19·4.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 29·5 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 4·8 per 1,000, the rates varying from 0·0 in Londonderry, Drogheda, Dundalk, Sligo, and Armagh, to 21·1 in Kilkenny—the 7 deaths from all causes registered in the last-named district comprising 5 from measles. Among the 149 deaths from all causes registered in Belfast are 10 from measles (being 4 over the number from that disease in the preceding week), 10 from whooping-

cough (an increase of 4 as compared with the number in the preceding week), 1 from diphtheria, 1 from enteric fever, and 1 from diarrhœa. The 62 deaths in Cork comprise 13 from measles (being a decrease of 9 as compared with the number from that disease in the preceding week), 1 from typhus, 1 from diphtheria, and 1 from diarrhœa. Among the 9 deaths in Waterford are 1 each from typhus, whooping-cough, and enteric fever. The 10 deaths in Newry comprise 4 from measles.

In the Dublin Registration District the births registered during the week amounted to 230—122 boys and 108 girls—and the deaths to 202—102 males and 100 females.

The deaths represent an annual rate of mortality of 29·8 in every 1,000 of the estimated population—omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 29·1 per 1,000.

Thirty-two deaths from zymotic diseases were registered, being 7 under the number for the preceding week, and 2 under the average for the fifth week of the last ten years. They comprise 2 from measles, 6 from scarlet fever (scarlatina), 10 from whooping-cough, 4 from enteric fever, 2 from dysentery, 1 from diarrhœa, &c.

There was but 1 case of small-pox admitted to hospital during the week, against 5 admissions in the preceding week; 12 cases of the disease remained under treatment in hospital on Saturday, February 4.

Ten cases of scarlatina were admitted, being 5 under the admissions for the preceding week; 15 patients were discharged, 1 died, and 56 remained under treatment on Saturday, being 6 under the number in hospital on Saturday, January 28.

One case of typhus and 4 cases of enteric fever were admitted; in the preceding week 2 cases of the former and 6 of the latter disease had been admitted. Ten cases of typhus and 20 of enteric fever remained under treatment in hospital on Saturday.

Forty-one deaths from diseases of the respiratory system were registered, being 28 under the average for the corresponding week of the last ten years, and 8 under the number for the week ended January 28. They comprise 30 from bronchitis and 7 from pneumonia or inflammation of the lungs.

In the week ending Saturday, February 11, the mortality in twenty-eight large English towns, including London (in which the rate was 22·4), was equal to an average annual death-rate of 22·2 per 1,000 persons living. In Glasgow the rate was 24·0; and in Edinburgh it was 22·2.

The average annual death-rate in the sixteen principal town districts of Ireland was 29·6 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 4·5 per 1,000, the rates varying from

0·0 in Londonderry, Kilkenny, Drogheda, Wexford, Sligo, and Lisburn, to 14·0 in Newry—the 13 deaths from all causes registered in the last-named district comprising 4 from measles. Among the 142 deaths from all causes registered in Belfast are 6 from measles (being 4 under the number from that disease in the preceding week), 10 from whooping-cough (being equal to the number in the preceding week), 1 from diphtheria, 1 from enteric fever, and 4 from diarrhœa. The 51 deaths in Cork comprise 16 from measles (being an increase of 3 as compared with the number from that disease in the preceding week), and 1 each from diphtheria, enteric fever, and diarrhœa. Among the 22 deaths in Limerick are 1 each from measles, scarlatina, and diarrhœa; and the 14 deaths in Lurgan comprise 2 from diphtheria.

In the Dublin Registration District the births registered during the week amounted to 205—110 boys and 95 girls—and the deaths to 202—86 males and 116 females.

The deaths represent an annual rate of mortality of 29·8 in every 1,000 of the estimated population—omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 29·2 per 1,000.

Twenty-six deaths from zymotic diseases were registered, being 5 below the average for the corresponding week of the last ten years, and 6 under the number for the week ended February 4. They comprise 1 from measles, 6 from scarlet fever (scarlatina), 9 from whooping-cough, 2 from enteric fever, 2 from diarrhœa, 1 from dysentery, 1 from erysipelas, &c.

During the week 1 case of small-pox was admitted to hospital, and 1 small-pox patient was discharged, leaving the number of cases (12) in hospital at the close of the week the same as that on Saturday, February 4.

Twenty cases of scarlatina were admitted to hospital, being 10 over the admissions for the preceding week; 7 patients were discharged during the week; and 69 remained under treatment on Saturday, being 13 over the number in hospital on Saturday, February 4.

Four cases of typhus, and 6 of enteric fever were admitted, against 1 case of the former and 4 cases of the latter disease admitted during the preceding week. Nine cases of typhus and 21 of enteric fever remained under treatment in hospital on Saturday.

Fifty-seven deaths from diseases of the respiratory system were registered, being 16 over the number for the preceding week, but 11 under the average for the sixth week of the last ten years. They comprise 31 from bronchitis and 11 from pneumonia or inflammation of the lungs.

In the week ending Saturday, February 18, the mortality in twenty-eight large English towns, including London (in which the rate was 20·6),

was equal to an average annual death-rate of 20·9 per 1,000 persons living. In Glasgow the rate was 25·9; and in Edinburgh it was 21·0.

The annual average death-rate represented by the deaths registered last week in the sixteen principal town districts of Ireland was 28·3 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 3·1 per 1,000, the rates varying from 0·0 in 9 of the districts to 7·0 in Newry—the 6 deaths from all causes registered in that district comprising 2 from measles, which caused 4 of the deaths registered in the preceding week. Among the 124 deaths from all causes registered in Belfast are 11 from measles (which caused 6 of the deaths recorded in the preceding week), 1 from scarlatina, 4 from whooping-cough (a decrease of 6 as compared with the number from that disease in the preceding week), 2 from diphtheria, 1 from "simple fever," and 2 from diarrhœa. The 40 deaths in Cork comprise 3 from measles (being a decrease of 13 as compared with the number from that disease in the preceding week), 2 from diphtheria, and 1 from diarrhœa; and the 35 deaths in Limerick comprise 2 from measles, and 1 from typhus.

In the Dublin Registration District the births registered during the week amounted to 217—104 boys and 113 girls—and the deaths to 175—85 males and 90 females.

The deaths represent an annual rate of mortality of 25·8 in every 1,000 of the estimated population—omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 25·3 per 1,000.

Deaths from zymotic diseases, which had fallen from 32 in the week ended February 4 to 26 in the following week, fell to 19, which number is 15 below the average for the corresponding week of the last ten years. The 19 deaths consist of 1 from measles, 7 from scarlet fever (scarlatina), 1 from typhus, 4 from whooping-cough, 1 from diphtheria, 1 from ill-defined fever, 2 from diarrhœa, 1 from erysipelas, and 1 from mumps.

Three cases of small-pox were admitted to hospital, against 1 admission in each of the two preceding weeks; 2 small-pox patients were discharged during the week, and 13 remained under treatment on Saturday, being 1 over the number in hospital on Saturday, February 11.

Nine cases of scarlatina were admitted to hospital, being 11 under the admissions for the preceding week; 9 patients were discharged, 4 died, and 65 remained under treatment on Saturday, being 4 under the number in hospital on Saturday, February 11.

Four cases of typhus and 7 of enteric fever were admitted, against 4 cases of the former and 6 of the latter disease admitted during the pre-

ceding week. Twelve cases of typhus and 24 of enteric fever remained under treatment in hospital on Saturday, February 18.

Fifty-five deaths from diseases of the respiratory system were registered, being 13 under the average for the corresponding week of the last ten years, and 2 under the number for the week ended February 11. They comprise 37 from bronchitis, 10 from pneumonia or inflammation of the lungs, and 5 from croup.

In the week ending Saturday, February 25, the mortality in twenty-eight large English towns, including London (in which the rate was 21·6), was equal to an average annual death-rate of 21·6 per 1,000 persons living. In Glasgow the rate was 26·9; and in Edinburgh it was 21·0.

The average annual death-rate in the sixteen principal town districts of Ireland was 31·2 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·9 per 1,000, the rates varying from 0·0 in nine of the districts to 5·1 in Lurgan—the 9 deaths from all causes registered in that district comprising 1 from diarrhœa. Among the 153½ deaths from all causes registered in Belfast are 8 from measles (being 3 under the number from that disease in the preceding week), 2 from scarlatina, 1 from typhus, 6 from whooping-cough (an increase of 2 as compared with the number in the preceding week), 1 from simple-continued fever, 1 from enteric fever, and 2 from diarrhœa. The 45 deaths in Cork comprise 4 from measles (being 1 over the number from that disease in the preceding week), 1 from whooping-cough, and 1 from enteric fever. The 40 deaths in Limerick comprise 1 from measles, and 1 from scarlatina.

In the Dublin Registration District the births registered during the week amounted to 178—86 boys and 92 girls—and the deaths to 192—89 males and 103 females.

The deaths represent an annual rate of mortality of 28·4 in every 1,000 of the estimated population—omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 27·5 per 1,000.

Twenty-three deaths from zymotic diseases were registered, being 4 over the number for the preceding week, but 7 under the average for the eighth week of the last ten years. They comprise 2 from measles, 8 from scarlet fever (scarlatina), 4 from whooping-cough, 3 from enteric fever, &c.

One case of small-pox was admitted to hospital, being 2 under the admissions for the preceding week; 2 small-pox patients were discharged, 1 died, and 11 remained under treatment on Saturday, February 25, being 2 under the number in hospital at the close of the preceding week.

During the week ended February 11, 20 cases of scarlatina were admitted to hospital; in the following week the admissions fell to 9, and this week they further declined to 5; 8 patients were discharged, 2 died, and 60 remained under treatment on Saturday, being 5 under the number in hospital on Saturday, February 18.

Five cases of typhus and 6 of enteric fever were admitted to hospital, against 4 cases of the former and 7 of the latter disease admitted in the preceding week. Seventeen cases of typhus and 26 of enteric fever remained under treatment in hospital on Saturday.

Fifty-six deaths from diseases of the respiratory system were registered, being 1 over the number for the preceding week, but 2 under the average for the eighth week of the last ten years. They comprise 41 from bronchitis and 9 from pneumonia or inflammation of the lungs.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N., Long. 6° 15′ W., for the Month of February, 1888.

Mean Height of Barometer,	30·119 inches.
Maximal Height of Barometer (on 28th, at 9 a.m.),	30·568 „
Minimal Height of Barometer (on 11th, at 9 p.m.),	29·461 „
Mean Dry-bulb Temperature,	38·0°.
Mean Wet-bulb Temperature,	36·2°.
Mean Dew-point Temperature,	33·2°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·194 inch.
Mean Humidity,	82·8 per cent.
Highest Temperature in Shade (on 3rd),	51·4°.
Lowest Temperature in Shade (on 14th),	24·8°.
Lowest Temperature on Grass (Radiation) (on 14th),	16·4°.
Mean Amount of Cloud,	73·1 per cent.
Rainfall (on 14 days),	1·097 inches.
Greatest Daily Rainfall (on 25th),	·273 inch.
General Directions of Wind,	W.N.W., N.E.

Remarks.

Notwithstanding a spell of mild weather, which lasted from the 3rd to the 10th, February, 1888, proved to be a very cold and snowy month. Even in Dublin snow or hail fell on as many as fourteen days, and the mean temperature was no less than 4·6° below the average, and 3·5° below that of the preceding month of January. The rainfall fell far short of the average, and consisted chiefly of melted snow and hail. The amount of cloud was very great—namely, 73·1 per cent. It is remarkable that during the mild, fine weather of the earlier part of the month the wind was generally north-westerly, an area of high atmospherical pressure lying off the S.W. of Ireland.

In Dublin the mean temperature (38·6°) was much below the average (43·2°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 38·0°. In the twenty-three years ending with 1887, February was coldest in 1873 (M. T. = 37·9°) and warmest in 1869 (M. T. = 46·7°). In 1886, the M. T. was 39·7°; in the year 1879 (the cold year) it was 40·1°. As a general rule, February in Dublin is only a shade colder than March. This is owing to the continued development in February of a winter area of low pressure over the Atlantic to the north-westward of the British Isles and to a resulting prevalence of S.W. winds in their vicinity, while the Continental anticyclone embraces the British Isles and Scandinavia in March, causing easterly winds and low temperatures. In 1888, however, the Continental anticyclone spread westwards across Scandinavia and the Norwegian Sea in the middle of February; hence the great cold of the latter half of the month.

The mean height of the barometer was 30·119 inches, or no less than 0·257 inch above the average value for February—namely, 29·862 inches. The mercury rose to 30·568 inches at 9 a.m. of the 28th, and fell to 29·461 inches at 9 p.m. of the 11th. The observed range of atmospherical pressure was, therefore, 1·107 inches—that is, a little over one inch and one-tenth. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 38·0°, or 3·5° below the value for January, 1888; that calculated by Kaemtz's formula—viz., *min.* + (*max.*—*min.* × ·41) = *Mean Temp.*—from the means of the daily maxima and minima was 37·9°, or 4·6° below the average mean temperature for February, calculated in the same way, in the twenty years, 1865–84, inclusive (42·5°). The arithmetical mean of the maximal and minimal readings was 38·6°, compared with a twenty years' average of 43·2°. On the 3rd the thermometer in the screen rose to 51·4°—wind W.S.W.; on the 14th the temperature fell to 24·8°—wind W.N.W. The minimum on the grass was 16·4° on the same date. The rainfall was only 1·097 inches, distributed over 14 days. The average rainfall for February in the twenty years, 1865–84, inclusive, was 2·244 inches, and the average number of rainy days was 17·6. The rainfall and the rainy days, therefore, were both very much below the average, although not to the same extent as in 1887, when only ·541 inch of rain fell on 11 days. In 1883 the rainfall in February was large—3·752 inches on 17 days; in 1879 also 3·706 inches fell on 23 days. On the the other hand, in 1873, only ·925 of an inch was measured on but 8 days. The rainfall in 1887 was much the smallest recorded in February for very many years. Snow or sleet fell on the 2nd, 11th, 12th, 14th, 15th, 19th, 20th, 22nd, 24th, 25th, and 29th. Hail fell on the 1st, 10th, 19th, 20th, 21st, 22nd, 24th, 25th, and 29th. The atmosphere was foggy on the 15th and 16th. High winds were noted on 11 days, reaching the force of a gale on only one day, the 2nd. The temperature exceeded 50°

in the screen on only 4 days, compared with 10 days in January; while it fell to or below 32° in the screen on 12 days, compared with only 3 in January. The minima on the grass were 32° or less on 22 nights, compared with 17 nights in January. On 13 days the thermometer did not rise to 40° in the screen.

In the period ending Saturday, the 4th, the barometer was, after the 1st, high over Germany and France, low and unsteady over Scandinavia, where the dominant systems of atmospherical pressure were cyclonic.

On the 1st, the depression, mentioned in last month's abstract as having travelled across Great Britain in a southerly direction on January 31, was filling up quickly over France. At night a keen frost occurred in England, the thermometer falling to 16° at Cambridge and to 10° at Hillington and Geldeston. On the 2nd snow and sleet fell in Ireland, off the S.W. coast of which country an area of high pressure became established.

This anticyclonic system continued to lie over the Atlantic off the S.W. of Ireland until Friday, the 10th; so that throughout this period the wind was northwesterly in the British Islands—more westerly in the North, more northerly in the South. The weather, although cloudy, was fine and mild—the singularly warm N.W. current being a remarkable feature of the period. After Tuesday, the 7th, the barometer fell gradually, and by Saturday, the 11th, pressure had become low, while cold showers were prevalent with a much reduced temperature. Snow and hail fell generally on Friday and Saturday. In Dublin the mean pressure was 30·076 inches, the barometer falling from 30·382 inches at 9 a.m. and 9 p.m. of Monday to 29·461 inches at 9 p.m. of Saturday. The mean dry bulb temperature was 43·2°. On Sunday, the 5th, the thermometer rose to 50·8°, and on Saturday, the 11th, it fell to 31·3°. Rain fell on three days (including hail on one day and snow on one day)—the total measurement being ·040 inch, of which ·015 inch was registered on Friday and an equal quantity on Saturday.

The week ending Saturday, the 18th, was the coldest experienced in the present winter. The mean dry bulb temperature was 33·0°, or only one degree above freezing point. Temperature was highest (43·5°) on Friday, the 17th, lowest (24·8°) on Tuesday, the 14th, when the minimum sank to 16·4° on the grass. The mean temperature was 10·2° below that of the previous week, and 9° below the average for the time of year. Until Friday the thermometer never rose to 40° in the screen. The mean height of the barometer was 30·033 inches—the lowest pressure was 29·503 inches about 3 p.m. of Sunday, the highest was 30·393 inches at 9 a.m. of Thursday. A little snow fell on Sunday night and early on Tuesday and Wednesday. The only measureable precipitation was, however, ·092 inch of rain on Saturday. The planet Mercury was clearly seen to W. by S. at 6 20 p.m. of Saturday, the 18th. The wind

varied between W. and N., except on Monday, when it "boxed the compass" as a snowstorm depression passed eastwards south of Dublin. On the 16th the thermometer fell to 1° at Lairg, in Sutherland, 4° at Braemar, and 8° at Brookeborough, Co. Fermanagh. On this day snow lay to the depth of 20 inches at Oxford.

The very winterly spell of weather which set in on Friday, February 10, persisted throughout the week ending Saturday, 25th. It is true that the minimal readings of the thermometer were not nearly so low in Dublin as they had been in the previous week—nevertheless, the weather was even more severe, for strong N.E. winds, piercing cold, and frequent heavy falls of snow and hail took the place of the dry and frosty weather of the preceding week. The barometer was high in the extreme north, low in the south (that is, over France, the Mediterranean, and Spain). Hence the strong E. and N.E. winds of the period. In Dublin the mean atmospherical pressure was 30·062 inches; highest, 30·231 inches at 9 a.m. of Friday; lowest, 29·802 inches at 9 a.m. of Sunday. The mean dry bulb temperature was 35·8°. Temperature was highest on Tuesday (41·0°), lowest on Sunday (31·3°). The rainfall amounted to ·796 inch on six days. Of this quantity ·273 inch was measured on Saturday. The precipitation was almost entirely in the form of snow and hail.

During the last four days, fresh to strong northeasterly to easterly winds prevailed, accompanied by dull, bleak weather, and on the Dublin coast frequent showers of hail and snow. In the S.E. of England temperature was very low at this time, and dry snow fell at times.

At Greystones, Co. Wicklow, the rainfall in February was only 0·38 of an inch, distributed over 8 days. The maximal fall in 24 hours was 0·12 inch on the 21st.

INFANTILE DIARRHŒA.

One hundred babies under twelve months of age are said to die weekly in Paris from diarrhœa during the autumn, according to Dr. D. Delattre (*Montpellier Médical*, Vol. IX., No. 3). He ascribes the diarrhœa to the presence of a special bacillus, which he says an alkaline medium favours. Consequently he recommends an acid treatment, and declares that in lactic acid we have a remedy capable of effecting a cure in two or three days. More agreeable and equally efficacious is Dusart's syrup of the lactophosphate of lime, which Dr. Parrot suggested in 1869 (*Archives Générales de Médecine*). He recommends four or five teaspoonfuls daily—the dose to be given about twenty-five minutes after the baby has been to the breast.

PERISCOPE.

ACCIDENTS ATTENDING ASPIRATION.

At the June meeting of the Chicago Medical Society, Dr. E. B. Weston reported the following accident as having occurred in his practice:—In aspirating the knee-joint the bottle attached to the needle was, instead of being exhausted, filled with compressed air. On thrusting the needle into the joint, "I was startled by a shriek of pain. . . . The muscles of the leg instantly became rigid and prominent, and the joint increased in size. . . . The cellular tissue of the thigh contained air, which could be felt for two weeks." The president, Dr. Beefield, reported a similar accident, in which death resulted in three minutes.—*Chicago Medical Journal and Examiner*, July, 1887.

IODOFORMISED ETHER.

M. Chandeleux (*Lyon Medical*, June, 1887) in five cases of chronic cystitis found good effects from the injection of a solution of iodoform in ether—13 parts of iodoform to 100 parts of ether. Two of the cases were tuberculosis, two rheumatic, and one gonorrhœal. Some of the patients urinated ninety-six times in the twenty-four hours.

RABIES.

M. Karuzo (*Novorossusky Telegraf*, 13th January) asserts, from a number of observations which he has made, that castrated dogs are not liable to contract rabies.

USTILAGIN.

This alkaloid, obtained from the ustilago maïdis, forms compounds with the stronger acids. The acetate is a white salt crystallising in long slender needles. The alkaloid is soluble in water, alcohol, and ether. Its physiological action, according to Dr. C. J. Rademaker, Louisville, Ky. (*Medical Herald*), resembles that of ergot, and it is recommended to be used for cases in which the latter is usually prescribed. The best form for administration is the fluid extract, which is given in doses of from half a drachm to a drachm.

SARCOMA.

Dr. S. W. Gross (*Am. Jour. of the Med. Sciences*), in a paper on "Sarcoma of the Female Breast," finds that "of 156 cases, the spindle-celled constitute 68 per cent., the round-celled 27 per cent., and the giant-celled 5

per cent. of all cases." Before the sixteenth year 2·70 per cent. occurred, 45·27 per cent. appeared between the sixteenth and fortieth years, and 52·02 per cent. after the fortieth year. The skin over the tumour was ulcerated in 18·59 per cent., discoloured in 23 per cent.; the nipple was retracted in 3·25 per cent.; and 1·9 per cent. only were the axillary glands affected.—*St. Louis' Courier of Medicine*, September, 1887.

PYROGALLIC ACID IN EPITHELIOMA.

An ointment consisting of half a drachm of pyrogallic acid to an ounce of lard is reported by Dr. M'Guire (*Am. Pract. and News*) as having cured four cases of epithelial cancer, the diagnosis in each case being confirmed by microscopic examination of the tissues. It should be remembered that the external use of pyrogallic acid is not wholly free from danger. Besnier lost a patient by its use; Pick had two cases in which it proved fatal; and Vidal had one fatal case from its use.

BLEEDING IN SUNSTROKE.

The report of three successful cases of sunstroke treated by bleeding recorded in the *American Practitioner and News* of the 3rd September, 1887, by Professor Anderson, of Louisville, Ky., reminds us of the great value of venesection in suitable cases—a fact which seems latterly to have been almost forgotten.

DEATHS FROM ALCOHOL.

According to Dr. E. C. Mann, thirty-three and one-third per cent. of all the deaths in New York "are occasioned directly or indirectly by the use of alcoholic drink."—*Chicago Med. Jour. and Examiner*, July, 1887.

SUICIDE IN THE COCAÏN HABIT.

The *Philadelphia Medical and Surgical Reporter* reports a case of suicide in Atlanta, Georgia, resulting from the cocaïn habit.

TOLERANCE OF DRUGS.

In a paper on the "Treatment of Tetanus," in the *Canada Medical and Surgical Journal*, October, 1887, Dr. Gooding relates the case of a patient, seventeen years old, who in four weeks took six ounces and three drachms of chloral and nearly ten ounces of bromide of potassium, besides an ounce of "liquor opii sedativus." The patient made a good recovery.

COCAÏN IN ZOSTER AND PRURITUS ANI.

Dr. Bianchi recommends a 3 per cent. solution of cocaïn to be painted on to relieve the itching in these troublesome affections.—*Lo Sperimentale.*

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XVI.—*Note on the Principle of Flap-splitting in Plastic Operations: a Recognition of Priority on the part of the late Maurice Collis.* By LAWSON TAIT, F.R.C.S.; Professor of Gynæcology, Queen's College, Birmingham.

A FEW days ago I received a letter, of which the following is a copy:—

"DEAR SIR,

"The operation of flap-splitting in vesico-vaginal fistulæ operations was designed by the late Mr. Maurice H. Collis, Surgeon to the Meath Hospital, Dublin, and a full description of his plan of operation, with cases, published in the *Dublin Journal of Medical Science*, May, 1861.

"Yours,

"HONOUR TO WHOM HONOUR IS DUE.

"Dublin, March 12th, 1888.

"P.S.—Your operation for repair of laceration of the perinæum is only one adaptation of his plan of operation."

I need only say, in the way of criticism of this letter, that the writer need not have concealed his identity, for I am under a personal obligation to him for pointing out what is an undoubted fact—that in this important matter my dead friend, Maurice Collis, was a long way ahead of us. It is, of course. a little disappointing to find that I have been anticipated; still more so that I have overlooked such a splendid contribution to the surgery of vaginal plastic operations as is the paper of Mr. Collis, in the

Dublin Journal of Medical Science of May, 1861. I have, however, a certain grim satisfaction that I am not alone in having thus overlooked the work of my old friend, for I cannot find it alluded to in any of our "authorities." This, indeed, is the cruel thing about such claims for priority—when successfully established they not only redound to the credit of our predecessors, but they make the successors look so foolish. In this case I have rediscovered what ought never to have been lost.

Mr. Maurice Collis was so good to me when I was a youth, I had such a high value for his friendship, and such a strong appreciation of his greatness as a surgeon, that it is a real pleasure to have your permission to reprint a few of his sentences in that paper, to show how completely he had recognised the value of his invention. The only thing he was wrong in was the method of applying the sutures. He used the old-fashioned quill-suture. I use the imbedded stitch, and that is an immense improvement.

My correspondent is wrong about my perinæum operation. That is a thing in itself, and it was from the immense gain I found in it that I developed the flap-splitting process for vesico-vaginal fistula and the radical cure for hernia. This does not in the least degree detract from Mr. Collis' meritorious invention, which he describes as follows:—

"The operation consists, first, in splitting the margin of the fistula all round, so as to separate the vesico-vaginal septum into two equal portions, one half consisting of the vaginal mucous membrane and submucous tissue, and the other of the vesical mucous membrane and submucous tissue, the muscular portion of the septum being equally divided between the two. The extent of this artificial separation is to be regulated by the extent of the fissure, by the condition of the margins, and, to a certain extent, by the position of the fissure. Where the fissure is near the vesical end of the urethra, or near the cervix uteri, the dissection need not be carried to any great depth. . . .

"Anyone who has removed a ring of mucous membrane from ever so small a fistula, will have observed how large it becomes under the process, and sooner or later will have probable cause to regret the loss of substance thus entailed; whereas, in my operation, if carefully done, no loss of material occurs; and even if it fail, it leaves the patient in no worse condition for subsequent treatment than before. . . .

"In this operation we have a double prospect of success. It

will be seen when the raw surfaces are drawn together by quilled sutures, that a ridge rises up on the vaginal surface between the quills. A similar and a larger ridge is thrown up towards the bladder; this acts as a valve to prevent the water escaping or even coming in contact with the wound; and even if the parts included between the quills should slough, the flaps which point towards the bladder are exempt from the pressure of the quills and the strain of the sutures, so that they escape from sloughing and actually unite before the other flaps, and remain united, even if the latter give way.

"The operation is simple and requires no very complex armamentarium, and only the amount of dexterity which should be possessed by every surgeon deserving of the name. . . .

"However, if such knives are not at hand, any pocket case will supply the want, for it is not so much the implement as the hand that guides it that secures success, and all surgeons ought to be able to do their work with as few implements as possible. . . .

"My operation is suitable to almost every case, and to many cases which could not be subjected to the older methods with the smallest chance of success.

"In a large gap, where the loss of substance is to be measured by square inches, no person could expect union by simply paring the edges and drawing them together by the interrupted suture. The strain on the threads would be too great, and they would inevitably cut out. Nor is the success of autoplastic operations, by which flaps are transplanted from neighbouring parts, such as to lead us to expect much from them. In these cases it is of great importance to have a mode of operating which can be frequently repeated without repeated diminution of the already scanty material. . . .

"In small gaps, on the other hand, it will not redound to the credit of the operator if the rent is made worse each time he interferes. Such a misfortune cannot happen by my operation in any case to which it is suited. There is no loss of substance; and the surgeon can begin again *de novo* in a few weeks with the parts in at least as favourable a condition as before."

ART. XVII.—*A Case of Gastric Epilepsy.*[a] By ARTHUR WYNNE FOOT, M.D., Univ. Dubl.; Senior Physician to the Meath Hospital; Vice-President of the King and Queen's College of Physicians in Ireland; Professor of the Practice of Medicine, Royal College of Surgeons in Ireland; Fellow of the Royal Academy of Medicine in Ireland; Diplomate in State Medicine, Trinity College, Dublin.

IN this communication the term gastric epilepsy is used in reference to epilepsy whose exciting cause is apparently due to the irritation of various kinds of food towards which the stomach exhibits an abnormal sensibility. The propriety of the term will be discussed by-and-by.

The subject of the case had, when three years old, an attack of what was regarded as cerebro-spinal meningitis. This was followed by very violent general chorea, which lasted for three weeks, after which one of his feet was for some time in a condition of talipes varus. There was no family history of epilepsy, but some neurotic traits were perceptible in his immediate relatives. His mother was of an excitable and emotional temperament, which might be socially called fussy and medically hysterical. His father died of paralysis, but it was induced by worry, overwork, and mental annoyance. One of his brothers suffered from brain failure after an attack of scarlatina. This collapse was marked by loss of memory, failure of power of application, and distaste for studies formerly relished. He recovered completely after prolonged rest.

The subject of the case was physically as strong and active as boys of his age, but was rather dull and retiring. He was not considered very forward. His education was effected slowly, from a disinclination to press him at lessons, because it was thought overstudy might be injurious to his brain on account of the severe attack he had when three years old. His tastes were quiet and unobtrusive. He was fond of gardening and of animals. His skill in rearing plants, often under great difficulties, was only equalled by his success in taming and training animals, over which he seemed to exercise a kind of fascination, which appeared to be reciprocated. These powers showed him to be possessed of much patience and close observation, combined with kindness and gentleness.

[a] Read before the Section of Medicine in the Royal Academy of Medicine in Ireland, March 9, 1888. [For the discussion on this paper see page 445.]

At the age of seventeen he had, in midwinter, an attack of scarlatina, which was not marked by any feature of undue severity. Delirium was slight and transitory. He desquamated safely, and there were no renal sequelæ. During convalescence there were rheumatoid pains in the joints and eyeballs, and his pulse was frequently below 70.

On August 12th, 1874, seven months after his recovery from the scarlatina, and when he was in his eighteenth year, he had a fit in the store-room at 6 p.m. He called out for his father, who was not far off, and who, on arriving, found him fallen to the ground, unconscious, convulsed, and frothing at the mouth. When I saw him half an hour afterwards his pulse was 60; the eyes were swollen, and the conjunctivæ much ecchymosed. The rupture of the subconjunctival vessels indicated a violent attack, as do petechiæ of the skin from rupture of the blood-vessels of the corium. It was admitted that he had been overeating himself lately, and the immediate cause of the attack was set down to a surfeit of not overripe plums to which he had got access in the store-room. It was not found out whether he had not also swallowed some of the plum stones. For several days subsequently the pulse ranged between 56 and 60. For some time before this attack he had been liable to diplopia after reading, and one day exclaimed, "Is there fish for dinner? I see two forks," when there was but one.

He spent the following month (September, 1874) in Wales, apparently in as good health as usual. On Sunday, October 4th, he eat a good deal of salad at dinner. That evening at 10 30, when he was in bed, reading a book before going to sleep, he felt a sensation going from the fingers of his left hand upwards towards his head. Then his head got confused. He called his mother several times, but only recollected having done so once. When she came to his room she found him in a fit—eyes open and turned upwards, mouth working, face very pale. He soon came to himself without any coma, but trembled afterwards, as if in a rigor, for 15 minutes. I saw him while trembling. Pulse was 80, and temperature 98·7°. Next day his pulse was 60, as usual. Dr. Hudson saw him with me in the afternoon, and it was decided to put him on belladonna, according to Trousseau's method:—

℞. Extracti belladonnæ - - gr. $\frac{1}{5}$
Pulv. fol. „ - - gr. $\frac{1}{5}$
Pro pil.; mitte 100 similes.

One pill to be taken every morning for the first month, two for the second month, and so on, according to the toleration of the drug and its influence on the disease. His bowels were to be cleared out beforehand with castor-oil and turpentine. This was done.

On Nov. 19th, he got a giddiness at luncheon time, and found himself "saying things wrong." Dec. 15th, got a queer sensation in his head at breakfast, and afterwards his arms became cataleptic; shortly afterwards he vomited for some time. He had eaten beef-steak at breakfast. On the evening of Saturday, Jan. 16th, 1875, he had a fit after having eaten a good deal of cream. May 12th, 1875, after an interval of four months, he had a fit immediately after dinner, at which he had eaten rich pudding.

Aug. 9th, 1875, Dr. Hudson saw him again. It was decided to leave off the belladonna, which had been increased up to four pills a day, and to put him on 15-grain doses of brom. potass. ter die with a small quantity of strychnin. His bowels have been most obstinately costive ever since his attack of scarlatina, although they used be quite regular before. Sept. 10th, 1875, he had an attack at Llandudno when he had almost finished his dinner. He had eaten a quantity of fat mutton. Dulness and hiccough after the fit were rather prolonged. Dec. 13th, 1875, had a fit at dinner; he had just eaten rapidly and heartily of roast mutton. He had a long attack of tremor after it.

Dec. 23rd, 1875, just at midnight, when in bed, he had a fit, the seventh of the *haut mal.* He called out for help sufficiently loud to alarm his parents, who found him convulsed and insensible when they got to his room. A little wine stopped the tremor and chattering of his teeth. Next day his pulse was 56. Dr. Hudson saw him a third time, and it was decided to have him dine early, to take some wine (Carlowitz), and he was ordered arsen. ferri, $\frac{1}{12}$ gr., phosph. zinci., $\frac{1}{4}$ gr.; ext. nuc. vom., $\frac{1}{4}$ gr.; in pill twice a day. His face has never got livid during or after a fit, and the most usual introductory symptom is giddiness and confusion of mind. Up to this he had had seven attacks of the fully marked kind:—

1. 12th August, 1874, attributed to plums.
2. 4th October, ,, ,, salad.
3. 16th January, 1875 ,, cream.
4. 12th May, ,, ,, chancellor's pudding.
5. 10th September, ,, ,, fat mutton.
6. 13th December, ,, ,, eating fast and rapidly.
7. 24th ,, ,, ,, no cause assigned.

The 2nd and 7th were taken in bed, four of the others at the dinner table, and one in a store-room. These seven attacks cover two years—1874 and 1875.

Jan. 20th, 1876, when half through his breakfast this morning he had a fit. The warning was longer than usual, but the attack was shorter—the convulsions lasting about a minute. At 2 p.m. the same day he dined on fish, and before he had finished eating he had a severe attack. While recovering from it I saw him. He was shaking violently; in a few minutes he vomited the fish he had been eating. This was the first occasion on which he had vomited after an attack, though he had often been given ipecacuanha wine and warm water to induce him to do so, and without success.

Feb. 5th, 1876, had a slight attack this morning before breakfast. Pulse just after it was 58. His face remained pale, indicating debility of the heart and anæmia of the brain—a constant phenomenon with him. It was thought that the occurrence of so many attacks at or after meal times might be due to digestive processes appropriating his scanty supply of blood, to the deprivation of the due allowance required for the brain.

Feb. 14th, 1876, had an attack at 2 p.m. after dinner. It was followed by vomiting of what proved to be more the porridge he had eaten at breakfast than the food he had just had at his dinner. He had been given a little brandy when he felt the fit coming on, and this attack was not followed by rigor, as had often been the case. April 5th, had a slight attack at dinner time; he was very hungry and was eating fast; was unconscious, but not sick afterwards. Aug. 11th, had an attack, not as severe as usual, immediately after dinner. Sept. 25th, a severe attack during dinner, at which he was noticed to have eaten greedily. Oct. 10th, had marked attack at dinner. There was an interval of what seemed to be five minutes between the time he made his usual exclamation, "I feel sick," and the time convulsions came on. In this interval his father walked him up and down the room, but did not abort the seizure. During the convulsive stage his mouth was wide open and pulled to the right side. This fit occurred at 3 p.m. He was quite well in the evening, and played a game of whist. There were rather rich cutlets at dinner that day, but he had not eaten much of them when he got ill.

Nov. 25th, 1876, he was examined by Dr. Brown-Séquard, who was in Dublin at that time. He considered there was some anæsthesia of the left side of the face, and some diminished power of

standing on the left side of the body. He ascertained that the sense of hearing in each ear was very acute, though the boy had almost constant tinnitus in the ears. He thought there was basal irritation in the brain, the result of the early meningitis or of the scarlatina, or connected with both; that some weak point in the stomach was the exciting cause of the manifestations—advised ice to be rubbed for fifteen minutes every second night to the back of his neck and to the interscapular spine, and prescribed his iodide-bromide mixture, ʒiss. three times a day, and ʒiiss. at bedtime. About an hour after this examination the patient got his sixteenth attack, while at his dinner, which was of boiled chicken. The warning stage was very long on this occasion. The application of the ice was so painful it was not persevered in; it used make the skin as red as if it had been scalded. The iodide-bromide mixture increased his pallor very much and produced troublesome acne.

March 11th, 1877, at dinner-time, after eating a few mouthfuls, he "got sick" as usual, was laid on the floor, but no convulsions ensued, nor did he completely lose his consciousness. The full development of the attack appeared to be warded off either by the horizontal position or by keeping his attention awake by talking to him, shaking him, and rubbing his hands and feet.

March 30th, had an attack like the previous one, but even milder. He is in such dread of eating that at times he almost starves himself.

A suggestion was now acted on of giving him, just before his dinner, five or ten drops of chloroform in a glass of wine, with the object of lessening the irritability of the gastric mucous membrane. In the middle of April, 1877, he got a sudden febrile attack, which, though it subsided in two or three days, caused some alarm (before it had been judged of by its disappearance), lest it should be of a meningitic nature. He wakened at 2 a.m., with very violent headache, and intolerance of artificial light. He could not stand, his eyes were injected, and he had osteal pains in the legs. Temperature was 102·2°, and pulse 108, which, considering the habitual slowness of his pulse (averaging 60), was for him a considerable increase in rate. There was no reason to regard it as due to iodism. The attack subsided under the hourly use of drop doses of tincture of aconite and some powders of calomel and pulv. Jacobi. Later on in this year (1877) the attacks assumed a milder character, taking more the type of the *petit mal;* thus, 15th July he had an attack of giddiness after rising,

which lasted only a short time; 11th Sept., had a more severe attack in the morning, with convulsions; they did not last long, and he was soon roused; 2nd Oct., a slight attack of giddiness, which soon passed off; 3rd Nov., an attack of giddiness at breakfast, which soon passed off while he was being rubbed smartly. It was found that during this year (1877) the attacks could be abbreviated by tickling, slapping, pinching, walking him up and down, talking loudly to him, giving him snuff, and in any way keeping his attention excited.

In Midsummer of 1878 a seton was put in the back of his neck. His handwriting had become very unsteady and his face was quite disfigured with acne, which had assumed the shape of dull red tuberosities. The bromide of calcium was substituted for that of potassium, and arsenical solution was added, without modifying the irritation of the skin.

He had attacks in August, September, October, and November of 1878. As the warning was now so long he had recourse to a bottle of nitrite of amyl, which he carried about him or had within reach, but for some reason or other it did not prove effectual. His handwriting improved immensely during the course of this year. The acne eruption resembled a crop of boils. In the year 1879 he had eight attacks—seven of the *petit mal*, one of the *haut mal*. In January, 1880, he had two attacks, both of a severe kind. After this there was a very marked diminution in the frequency and severity of the seizures, which, as is often said in reference to chronic cases, wore gradually away. In this year, 1880, which may be called the final year of the disease, he took nitrate of silver for some time, and also pills of phosphorus and valerianate of zinc, but it was evident the disease had been upon the wane before these remedies had been employed.

In reference to the title which I have given this case, I wish to remark that I have called it gastric epilepsy entirely from a clinical point of view. The first nine attacks occurred at or immediately after meals, and appeared to be connected either with the use of unsuitable articles of diet or with an injudicious method of eating ordinary food. The earlier attacks ensued after eating such things as half-ripe plums, salad, cream, chancellor's pudding, rich mutton. The greater number of the subsequent fits were either during or soon after dinner. The dining-room was the place in which he was generally taken ill. On some occasions vomiting indicated a desire on the part of the stomach to rid itself

of something noxious; yet it was found that emetics often failed to unload the stomach. The term Gastric Epilepsy has the sanction of Sir George Paget,[a] who, in a lecture thus headed, delivered at Addenbrooke's Hospital, observes that "in no organ is the immediate exciting cause of epileptic fits more frequently found than in the stomach." He reports the case of a hospital patient of his whose head had been injured in early boyhood by the kick of a horse, and who may thus have acquired some predisposition to the disease. No symptom of it, however, appeared until one day, when he was fifteen years old, he ate an enormous number of cherries, including many of the stones. An epileptic fit was the consequence. Several fits followed—at first at intervals of a few months, then of one month, and then more frequently. They were preceded by an aura from the epigastrium to the head. At the age of twenty-four he was found drowned in a shallow ditch, into which he was supposed to have fallen in a fit.

The occurrence of the first fit in my patient within a few months of recovery from scarlatina might suggest the possibility of a uræmic attack, only that it had been ascertained that at the time of its occurrence, and for a long time previous, his kidneys had been acting healthily, and that the urine was perfectly normal. Scarlatina has been frequently noted as a disease precursory to epilepsy. In 19 out of 37 cases collated by Dr. Gowers,[b] in which an acute illness was the apparent cause of the first fit, that illness was scarlatina; and these cases of epilepsy subsequent to scarlatina all commenced during early life—under seventeen.

In another place[c] it is stated by Gowers that more cases of epilepsy are consecutive to scarlatina (apart from the influence of nephritis) than to all the other acute diseases put together. It may appear to some that the case which I have detailed under the name of gastric epilepsy might have been more properly named as a case of epilepsy in one whose gastric arrangements were in a morbid state, and I would not object to such a change of title. It may, I think, be taken as a fair statement of the case to say that probably the early attack of meningitis, and the violent chorea which followed it, so impaired the nutrition of the motor centres as to have left a predisposition to further disturbance under the action of another exciting cause.

[a] Lancet. 1868. Vol. I., p. 459.

[b] Gulstonian Lectures. British Medical Journal. 1880. Vol. I., p. 356.

[c] Diseases of the Nervous System. Vol. II., p. 679.

However, as to the use of the name which I have adopted—that of Gastric Epilepsy—it is a very old notion that many cases of epilepsy were directly connected with gastric irritation; and hence, perhaps, the stress which used be laid upon regimen in the treatment of such cases. We have the *epilepsia stomachica* of Sauvages, Cheyne, &c., and the *epilepsia gastrica* of Frank and others. Cheyne relates the case of a celebrated physician who had suffered from epilepsy for a considerable time, and had used numerous remedies without benefit. As he perceived the attacks occurred less frequently the fewer and the more digestible the articles of food he consumed, he confined himself entirely to milk. He took a pint of milk in the morning, another in the evening, and two in the middle of the day, taking nothing besides but water. He continued this diet for fourteen years, and entirely recovered from his epileptic attacks—an instance of abstemiousness which, Romberg remarks, is not often to be met with.

The dietary of epileptic patients has been regarded by many as a matter of cardinal importance. Dr. Gowers does not attach so much weight to this matter as do many of the older authorities. In some observations which he made, by keeping a patient under unaltered medical treatment for alternate periods, on a diet with and without animal food, he could observe no difference in the attacks, except that in one patient they were slightly more frequent in the periods when animal food was excluded, and in one patient hystero-epileptic attacks on ordinary diet became, when meat was excluded, severe epileptic fits, and again became hystero-epileptic when animal food was restored.[a]

The frequency of an epigastric aura as a subjective commencement of a fit may have fixed attention on the stomach as the starting-point, more than would have been the case had visceral auræ in the region of the pneumogastric nerve been less common. In former days the aura was regarded as a change in the nerves of the part to which it was referred, exciting the fit, whereas now it is known to be merely the impression made upon the consciousness by the commencing action in the brain, or by the effect of this on the periphery. The fact that an aura commencing in a limb may be arrested by a ligature around the limb, above the part to which the sensation is referred, was once thought to constitute evidence that the process of the convulsion originated at the periphery, and extended thence to the cerebrum. It is

[a] British Medical Journal. 1880. Vol. I., p. 549.

now well known that the ligature will arrest a fit which is due to a cerebral tumour as effectually, and more frequently, than one of any other kind.[a] In the case which I have reported improvement set in after perseverance in Brown-Séquard's mixture. The frequency as well as the violence of the attacks diminished under its continued use. Great personal disfigurement was the result of the large doses of the iodide and bromide of potassium, and the combination of either arsenic or strychnin did not seem to lessen the amount or size of the acne. The patient is now able to discharge the duties of an official post with complete efficiency.

ART. XVIII.—*Report of the Gynæcological Department of the Rotunda Lying-in Hospital, Dublin, for the year ending November* 3, 1887.[b] By ALFRED J. SMITH, M.B., M.Ch., M.A.O., R.U.I.; Assistant Physician to the Rotunda Lying-in Hospital, Dublin.

IN submitting the Report of the Gynæcological Department of the Rotunda Hospital for the year ending November 3rd, 1887, I wish to return my sincere thanks to Dr. Macan, the present Master of the Hospital, for the privilege of so doing.

Gynæcological Wards.—The gynæcological wards contain 30 beds; 450 patients were received during the year, being an increase of 106 over the previous twelve months. I have divided the various diseases into three classes—extra-uterine, uterine, and miscellaneous, and I have tabulated under each head the diagnosis with result, showing mortality per centage.

TABLE I.—*Extra-uterine Diseases.*

Diagnosis	No.	Cured	Relieved	Died
Hæmatoceles	9	9	—	—
Extra-uterine Fœtation	2	1	—	1
Para-perimetritis	24	22	—	2
Parametritis Posterior	10	—	10	—
Ovarian Tumour	11	7	3[c]	1
Abscess of Ovary	1	1	—	—
Hydrosalpinx	1	—	—	1
Total	58	40	13	5
Mortality	—	—	—	8·6 °/₀

[a] Gowers. British Medical Journal. 1880. Vol. I., p. 394.

[b] Read before the Section of Obstetrics of the Royal Academy of Medicine in Ireland, on Friday, February 10, 1888.

[c] Left Hospital before operation.

Table II.—*Uterine Diseases.*

Diagnosis	No.	Cured	Relieved	Died
Retroflexions	48	40	8	—
Retroversions	39	36	3	—
Prolapse	6	2	4	—
Inversion	1	1	—	—
Hyperinvolution	1	—	1	—
Endometritis Catarrhalis	57	51	6	—
Fungus Endometritis	4	4	—	—
Endocervicitis with Erosion	34	34	—	—
Fibroid Tumours	8	—	7	1
Fibrous Polypi	8	7	1	—
Sarcoma Uteri	2	—	2	—
Sarcinoma Uteri	30	—	30	—
Dysmenorrhœa	8	6	2	—
Stenosis of Internal Os Uteri	1	1	—	—
Extensive Laceration of Cervix	1	1	—	—
Total	248	183	64	1
Mortality	—	—	—	·4 °/₀

Table III.—*Miscellaneous Diseases.*

Diagnosis	No.	Cured	Relieved	Died
Incomplete Abortion	18	18	—	—
Missed Abortion	1	1	—	—
Vesico-Vaginal Fistula	3	1	2	—
Vaginitis	11	8	3	—
Vaginal Abscess	5	5	—	—
Thrombosis Labiorum	3	3	—	—
Labial Abscess	4	4	—	—
Lacerated Perinæum	4	4	—	—
Cystitis	5	—	5	—
Incontinence of Urine	1	—	1	—
Ascites, Carcinomatous	1	—	—	1
Irreducible Abdominal Hernia	1	1	—	—
Ruptured Abdominal Hernia	1	1	—	—
Phlegmasia Alba Dolens	6	6	—	—
Albuminuria	3	—	3	—
Jaundice during Pregnancy	2	2	—	—
Syphilis	2	—	2	—
Mastitis	8	8	—	—
Chlorosis	12	12	—	—
Leucocythæmia	1	—	—	1
Acute Pharyngitis	2	2	—	—
Pneumonia	3	3	—	—
Pregnancy	37	37[a]	—	—
Convalescence after Labour	20	20	—	—
Total	154	136	16	2
Mortality	—	—	—	1·3 °/₀

[a] Transferred to labour wards.

It is impossible to consider in detail all this long list of cases, but I shall bring only under your notice those possessing special features.

Hæmatoceles.—Out of a total of 450 cases, hæmatoceles occurred with great relative frequency in exactly two per cent. of the entire number, the characteristic symptoms being sudden collapse, with pain in the abdomen, subnormal temperature, and a very persistent reddish discharge per vaginam, with the formation, after a time, of a well-marked tumour of the posterior *cul-de-sac*, displacing the uterus forwards. It usually occurred in women who had reached the period of greatest uterine activity, between the ages of twenty-five and thirty-four. The treatment consisted in strict rest in bed in the acute stage; no medicines were given except opium for pain, and an aperient mixture to keep the bowels open, and at a late period quinine and iron to counteract anæmia. Aspiration was employed in two cases as an aid in diagnosis; both these patients derived much benefit from the lessening of the tension in the tumour. In neither case did any reaction follow the operation. All ended in recovery.

Extra-uterine Fœtation.—Of the two cases of extra-uterine fœtation, one died. The fatal case was that of a woman, aged thirty-four, who had five children, the youngest of whom was eight and a half years old, and who was admitted into hospital Feb. 28th, 1887, in a very anæmic condition. Her changes had ceased two months previously; she had enjoyed good health until three weeks before admission, when, as she was walking across the kitchen, she was suddenly seized in the right side by a dull aching pain, and she fell in a state of collapse on the floor; a profuse metrorrhagia set in. On examination a large fluctuating tumour was found to fill the posterior *cul-de-sac*. The uterus had a length of 10·5 cm., and was displaced forwards towards the left side; secretion well marked in the breasts. The tumour was aspirated, and four ounces of dark blood drawn off, the second syringeful being quite bright and arterial. On removing the canula a jet of blood escaped from the puncture, which was, however, easily controlled by an iodoform plug. The patient died eleven days after of peritonitis, and a *post mortem* by Dr. M'Kee showed that the whole of Douglas' pouch was filled with clots, which had formed a tolerably compact globular mass adherent to the posterior wall of the uterus. In this mass of clots, immediately in front of the rectum, there was a cavity in which lay a fœtus apparently of the third month, its exact rela-

tion to the peritoneum could not be made out, but it seemed free in the pelvic cavity.

Pelvic Cellulitis.—Of pelvic cellulitis we had 24 cases, with a mortality of 2, or 8·5 per cent.; of these 16 followed after childbirth; 5 gave a history of exposure after menstruation; 2 resulted from treatment; and 1 from gonorrhœal injection; only two of these cases were delivered in the hospital. The mode of termination shows some interesting facts—14 ended in absorption, and 10 in abscess. Of the latter, 6 pointed over Poupart's ligament, and were opened under ether; 1 became absorbed; 2 opened into the rectum; and 1 into the bladder. The case of absorption is one of singular interest. A patient, aged twenty-five, III.-paræ, was admitted on October 23rd, 1886, six weeks after confinement, with an extensive effusion in right iliac fossa. On Nov. 6th a distinct fluctuating abscess was palpated, pointing over Poupart's ligament, and preparations were made for opening it; the operation was, however, unavoidably postponed. The following morning the tension was less marked, and the temperature had fallen, and each succeeding day we found that the abscess gradually grew smaller, and the patient's condition improved; no pus passed through rectum or bladder; the patient was discharged December 28th, the pelvic effusion having entirely disappeared.

Posterior Parametritis.—Posterior tender ligaments were frequently met with, the prevailing symptom being severe rectal pain on defæcation; the uterus, with ovaries and tubes, were generally found normal, but sweeping the finger along the posterior *cul-de-sac* from side to side caused excruciating pain, as did also the displacement of the cervix forwards. In some cases the ligaments were quite short, tense, and thickened, while in others nothing pathological could be made out. The line of treatment was as follows:—Hot vaginal douches, 110° F.; puncture of cervix and glycerine plugs, with the internal administration of $\frac{1}{16}$ gr. of perchloride of mercury three times a day. This painful affection seems very persistent, and does not yield readily to treatment.

Tubes.—It is curious that only one case of serious tubal disease, justifying operation, occurred during the year.

Abdominal Section.—There were 15 abdominal sections, as follow:—

TABLE IV.—*Abdominal Section.*

No.	Sent by	Name	Age	Married or Unmarried	Remarks	Result
1	Dr. M'Cormack, Corofin	Annie M.	25	Unmarried	Ovarian Tumour	Recovered
2	„ „	A. P.	40	Married	Fibroid Tumour; Ovaries removed	„
3	Drs. Walsh and Gunning	K. L.	30	„	Ovarian Tumour; complicated encysted Peritonitis	Died
4	„ „	Mary T.	29	„	Ruptured Abdominal Hernia	Recovered
5	„ „	M. Mac.	33	„	Ovarian Tumour	„
6	„ „	L. G.	40	Unmarried	Fibroid Tumour; Hysterectomy	Died
7	Dr. M'Cormick, Mayo	C. L.	28	Married	Ovarian Tumour	Recovered
8	„ „	A. D.	40	„	„ „	„
9	Dr. Smith, Kinnety	M. W.	34	„	Double Hydrosalpinx; extensive adhesions; Rectum opened	Died
10	„ „	M. J.	35	„	Large double Abscess of Ovary	Recovered
11	Dr. Craig, Derry	M. M'G.	28	„	Collapsed Ovarian Tumour, with encysted Peritonitis	„
12	„ „	M. A.	47	„	Peritonitis (Carcinomatous); Patient lingered 3 weeks	Died
13	„ „	M. L.	—	„	Irreducible Umbilical Hernia; 7 months' pregnancy	Recovered
14	„ „	M. M'H.	46	„	Ovarian Tumour	„
15	Dr. Davis, Donabate	M. A.	60	„	„ „	„

Abdominal sections were performed eight times for the removal of ovarian tumours—once to remove the ovaries in a case of uterine fibro-myoma, once to perform hysterectomy, twice for the radical cure of hernia, once for the removal of a double ovarian abscess, and once in a case of peritonitis, which proved to be carcinomatous, making in all fifteen, with four deaths.

Case No. 4 has many points of interest. The patient, aged twenty-nine, had undergone abdominal section, two years previously, for abscess of the upper wall of the bladder. A hernia had formed in the old incision. She was repeatedly advised to undergo operation, but refused. One evening, about 7 o'clock, the hernia burst, and seven hours afterwards, at 2 a.m., she was carried into hospital. We found coils of the ileum lying on the abdomen, rolled up in a dirty chemise, and matted with the hair of the pubes. The intestines were carefully washed with a 1 per cent. warm carbolic solution, several tags of strangulated omentum were ligatured and removed, the abdominal opening enlarged, and the intestines returned; but the adhesions around the margins of the opening were so extensive that Dr. Macan thought it better to postpone the operation until daylight, and, accordingly, placed a large flat sponge on the intestines, and closed the wound for the night. Next morning it was reopened, the adhesions separated, and the abdominal wound closed by interrupted sutures. The patient recovered without any bad symptoms. Within the last few days the patient has been again operated on for recurrence of the hernia.

The diagnosis as to the nature of the abdominal tumour in Case No. 11 was difficult. The history was as follows:—Mrs. M'G., six weeks after her last confinement, noticed a swelling in her abdomen. She consulted her medical attendant, who tapped her. Within two weeks from tapping it increased so much in size as to measure 83 cm. round umbilicus, and 87½ cm. below. On inspection, abdomen was prominent in the front, not bulging at the sides; percussion gave a tympanitic note in front and low down in the flanks; the intermediate portion dull; area of tympanites, on front of abdomen, moved as the patient lay on one or other side, or changed her posture; on succussion a distinct splashing was heard; by palpation a positive tumour could be made out, and its margins distinctly felt. Patient's evening temperature, 102° F.; no history of rigors. The operation revealed a collapsed ovarian tumour, surrounded by an encysted peritonitis; there was an escape of gas

on opening peritoneum, the fluid was sero-sanguineous in character, and the thickened peritoneum was at first mistaken for cyst wall, and a considerable portion was detached before mistake was detected. The ovarian pedicle was ligatured and returned; the peritoneal cyst cavity was washed with weak carbolic solution, thoroughly dried and dusted with iodoform. Patient made an uninterrupted recovery.

Uterine.—Under the head of uterine diseases, the cases possessing features of exceptional interest were those of fibrous polypi, carcinomata, and disease of the endometrium.

Polypi.—In one case of fibrous polypus from the posterior lip of the cervix there was such extensive adhesion between it and the posterior vaginal wall as to prevent the application of the ecraseur, or the twisting of the pedicle. On attempting to remove it piecemeal, with Schultz's double spoon, a dangerous hæmorrhage set in, which was, with difficulty, controlled by plugging. A secondary hæmorrhage followed, when the plug was removed twenty-four hours afterwards. In another case, where the polypus from the anterior lip had undergone sarcomatous degeneration, Schroeder's high operation for the removal of the cervix was performed. This patient presented herself for examination, two months after the operation, with a small nodule in anterior lip, about the size of a marble, which was removed, and microscopic examination showed a recurrence of the disease.

Carcinomata.—Of the total number of cases 30, or 6·6 per cent., were carcinomata uterina—a most painful fact; and this return, when compared with previous years, shows a remarkable increase. Fifteen of the cases occurred in women about the age of forty-five, 10 were aged thirty or over, 1 was twenty-eight, and 1 so young as twenty-six. The cervix was attacked in 15, the fundus in 6, and both cervix and fundus in 6. Unfortunately, the disease was too far advanced when the patients were admitted into hospital to justify any radical operation; nothing was left to be done, except to palliate the urgent symptoms by curetting down to the healthy tissue, and thoroughly cauterising with Paquelin's cautery, the bimanual being made from time to time to avoid opening peritoneum. Hæmorrhage was easily controlled by plugging. The effect of this operation is most remarkable, causing immediate relief from pain, taking down the temperature, and getting rid of the fœtid discharge—in fact, making a previously miserable existence for a time bearable.

Endometritis.—The various cases of endometritis were treated by curetting and injections of equal parts of liniment and tincture of iodine, as described below in cases of incomplete abortions.

Emmet's Operation.—Emmet's operation was performed only once.

Endocervicitis with Erosion.—In endocervicitis with erosion the cervix was bathed, twice a week for three minutes, with pyroligneous acid, which was carried into the uterus on a Playfair's probe, armed with cotton wool. Puncture and excision of cervix were found necessary only in obstinate cases.

Miscellaneous.—Among the miscellaneous groups the treatment of incomplete abortion and the plastic operation about vagina and perinæum are of interest.

Incomplete Abortion.—The routine treatment in incomplete abortion consisted in washing out vagina and uterus with warm Vartry water through a Bozeman's catheter; the uterus was drawn down by an American forceps, and the perinæum held back by a Fritsch's speculum; the entire decidua was curetted until the curette scraped against the muscular tissue; the uterus was then again washed out, and a Braun's syringeful of equal parts of liniment and tincture of iodine was injected. Great precautions were taken to insure a good return, by drawing the canula backward and forward so as not to increase intra-uterine tension and force any through the tubes. The patients were generally confined to bed for three days, the hæmorrhage stops at once if thoroughly curetted, and in not a single case of the entire 18 had we any reaction.

Vesico-vaginal Fistulæ.—Vesico-vaginal fistulæ are fortunately much less frequently met with than formerly. All the three cases, which were sent up to us, were caused by prolonged labour, during which no instruments were used. In one case, a mother of five children, the urethra was completely slit up, and the anterior vaginal wall was absent, with extensive prolapse of bladder. The lesions were so extensive that no plastic operations succeeded. Plastic operations about vagina and perinæum were performed six times; the interrupted silk suture was employed in one case; in the remaining five the continuous catgut stitching the freshened surface in terraces. Only in one instance, after this method, had we imperfect union, due either to lacing the ligatures too tight, or to the cutting through of the deeper stitches while stitching the superficial lesions.

Puerperal Women.—The twenty cases of puerperal women repre-

sent all those transferred from obstetrical wards whose convalescence exceeded eight days.

Curetting.—The uterus was curetted 105 times, including incomplete abortion, 18; carcinoma, 30; and endometritis, 57, without any reaction following, showing that, when properly performed, this operation is entirely devoid of danger.

Some Methods of Examination.—The bimanual method of examination is practised and taught with the patient in the dorsal position on a Schroeder's chair. The uterine sound has been found most useful during the year as a valuable aid in diagnosticating many diseases of the endometrium; it detects with accuracy the patulous condition of the internal os, whether the mucous membrane be over-sensitive, thickened, or roughened, and will demonstrate its tendency to hæmorrhage if that condition be present.

Schultz's pelvic diagrams are used to encourage accuracy of diagnosis, and Wyder's transparent plates as illustrations of pathological conditions.

Antiseptics.—Antiseptic solutions are employed only where the hands or instruments have been engaged in septic cases. The stages of disinfection practised are, for the hands—

1st. Thorough scrubbing for a couple of minutes, with carbolic soap and a nail-brush, in a 5 per cent. carbolic solution.

2nd. Rinsing in fresh carbolic solution.

3rd. Soaking for one minute in 1–500 corrosive sublimate solution.

All instruments are disinfected by boiling in a 5 per cent. carbolic solution. For some time past irrigations of ordinary Vartry water have been employed in all ordinary operations about uterus and vagina, such as curetting in the case of incomplete abortions, and as good results have been obtained as where solutions of carbolic acid or corrosive sublimate were used for this purpose.

ART. XIX.—*Glengarriff as a Winter Health-Resort.*[a] By D. EDGAR FLINN, F.R.C.S.I., M.K.Q.C.P.I.; Examiner in Public Health, Royal College of Surgeons in Ireland; Surgeon to St. Michael's Hospital, Kingstown; Fellow of the Royal Academy of Medicine in Ireland; late Medical Officer of Health, East Staffordshire, &c.

THIS charming health-resort, so naturally well situated on the shores of Bantry Bay, has of late years become much more easy of access than hitherto. Yet how many there are who seem to be unaware of its existence, and of the climatic advantages which it offers. Glengarriff is one of the bright sunny spots in this island, where nature has been most lavish in bestowing her choicest gifts. To speak of its scenic attractions is to divert attention from the point upon which it lays claim (and that a strong claim too) to the notice of the health-seeker and the invalid.

Glengarriff supplies a want long felt in Ireland, where the sufferer recovering from a long tedious illness may find a climate mild, equable, and yet invigorating—a climate similar and in many respects preferable to that of Torquay, Bournemouth, or the Isle of Wight, a locality now more easily arrived at, and completely sheltered from the east, north, and north-west winds. The climatic conditions of Glengarriff have been considered in many respects similar to those of Pau in the south of France, with the difference that the air at the former is more bracing, and not so relaxing, as that experienced at the French health-resort. One incontestable and striking proof of the mildness of the climate is the abundant and forward character of its vegetation; tender fruit trees, which in other parts of Ireland are carefully nursed under cover during winter, here thrive without any protection. Grapes ripen in the open, and on every side are to be met the rarest and most delicate ferns and flowering shrubs of all kinds, rarely seen outside of a conservatory in these countries. The same may be said of table produce; the potato (that favourite vegetable of the million in Ireland) planted early in February is ready for use in May. This fact alone, the luxuriant growth of the vegetable world at Glengarriff, is a very striking illustration of the exceptional mildness of the climate, and silently, though impressively and eloquently, conveys more than the most graphic description that could be

[a] Read before the Section of State Medicine in the Royal Academy of Medicine in reland, Friday, April 6, 1888. [For the discussion on this paper see page 451.]

given of this health-restoring and charming district. Goldsmith's lines—

> "Where smiling spring its earliest visit paid,
> And parting summer's lingering bloom delayed,"

may aptly be applied to Glengarriff.

Glengarriff is protected from the northerly and easterly winds by the Caha range of mountains, from the westerly winds by a spur of this same range, the "Sugar Loaf," the highest mountain, being about 1,900 feet above the level of the sea—in fact, the balmy south wind is the only one that has any power at Glengarriff, and that comes to it tempered by the benign influence of the Gulf Stream. The biting easterly winds that are experienced in the early spring at other health-resorts on the coasts of Great Britain and Ireland are utterly unknown here, and the invalid in the months of February and March can with safety avail himself of the boon of outdoor exercise, the air being genial and warm. In the early spring of the present year (February), when the writer visited Glengarriff, the thermometer in the open at midday in the sun registered as high as 76°, and in the decline of the afternoon never went below 58°, and so mild was the climate in the evenings that persons were enabled to sit in the open air without feeling any discomfort or chilliness; we were experiencing May weather.

Leaving Dublin (Kingsbridge) at nine o'clock any morning, one can arrive at Glengarriff at seven o'clock, or a little after, in the evening. The drive from Bantry to Glengarriff is very picturesque and beautiful, the road skirting the borders of the Bay for nearly all the distance. During the winter and spring months, the hotels will send, on being apprised, most comfortable and well-appointed closed carriages, and during the summer season there is a regular service of coaches running through from Bantry to Glengarriff, Kenmare and Killarney. Some years ago the journey to Glengarriff was looked upon as well-nigh an impossible task, but now it is most easy of access, and it seems very probable that within the next few years it will be placed in direct railway communication with all parts of Ireland. The hour and a half's drive, or thereabouts, from Bantry to Glengarriff, will be found by the invalid to be undoubtedly the most tedious part of the journey, but to such persons it would be advisable to rest in Cork one night, and go on to Bantry and Glengarriff next morning; the rest will be of service, and the drive on the following day along the sheltered shores of Bantry Bay will be most delightful and exhilarating.

Since Glengarriff has now become more easy of access, has such good hotel accommodation, and can offer unusual climatic advantages, it becomes a matter for earnest consideration whether we are justified in recommending patients (more especially those suffering from pulmonary affections) to places removed by long distances from their homesteads. It is doubtful whether the invalid is compensated for the loss of home associations and kindred comforts entailed by a long journey to the Continent. Here we have a district surrounded on all sides by high chains of mountains, and protected from all the cold and biting winds, open only to the balmy wind from the south, with an annual mean temperature of 52°, a winter mean temperature of 46°, an unusual amount of sunshine, a mild and equable climate, as evidenced by the luxurious character of the vegetable world, and hotel accommodation of the best class—in fine, a Madeira in Ireland. It is surely well worth our while to turn our earnest attention to the advantages so manifestly derivable from a health-resort so near home, and possessing so many natural advantages.

There can be no question of the suitability of Glengarriff as a residence for invalids in the winter and spring time of the year; its unusually mild and equable climate renders it a most desirable residence for sufferers from bronchial affections, consumptive and asthmatic patients specially deriving great benefit and relief from a sojourn there. Rheumatic and gouty patients requiring a high temperature and a minimum of variability of weather will derive considerable relief during the winter months from a visit to Glengarriff. To the latter class of sufferers the climate offers very many advantages; to the consumptive invalid, the sun heat in the winter and spring time of the year permitting on most days open-air exercise, is invaluable; in the majority of such cases the advent to Glengarriff is marked by an increased appetite, a disappearance of night perspiration and fever, and an improvement in the whole constitution; and I do not hesitate to say that in cases of consumption, or where there is a tendency to that disease, the climate and sheltered situation of Glengarriff have very marked and unrivalled advantages, surrounded as it is on the north, east, and west by lofty ranges of mountains, and thus protected from the harsh and biting east and north winds. The absence of foggy weather is also remarkable, and to the bronchial sufferer this is most important, as the baneful effects of fogs on pulmonary diseases are well known. It is a remarkable coincidence

that comparatively few cases of phthisis and other affections of the chest and throat occur at Glengarriff and the surrounding districts.

Dr. Blennerhasset stated some years ago that in his dispensary practice he had only one consumptive case in 2,000, and out of 163,000 patients the number who laboured under phthisical disease was 85; he added that this malady was still rarer among the gentry, and that the progress of the disease was slower than was usual elsewhere. The late Dr. Alfred Hudson, of Dublin, Physician to the Queen in Ireland, bore testimony to the superior claims of Glengarriff as a winter and spring health-resort as follows:—"I first became acquainted with Glengarriff many years ago, when suffering from an obstinate laryngeal cough, which, however, rapidly yielded to the influences of its mild climate; since then I have induced many invalids to resort to it, and with, I may say, decided advantage in every instance."

The late Dr. Hayden, Vice-President of the King and Queen's College of Physicians, Ireland, whose accurate information about disease and observant mind are well remembered, referring to Glengarriff, says:—"Few wants are more sensibly felt in Ireland than that of a suitable health-resort, to which, without submitting to the pain and inconvenience of leaving their own country, those suffering from chronic or recurrent affections of the respiratory organs may have recourse during the winter and early spring months.

"A locality easy of access, sheltered from the east, the north, and north-west winds, presenting fine natural scenery under its most attractive form of mountain, wood, and water combined in due proportion, enjoying a warm, equable, pure and dry air, and affording, at a moderate expense, all the advantages of a comfortable home, with adequate provision for active exercise out of doors, free from the ordinary dangers of exposure, would supply the requisites of an establishment such as I contemplate.

"Glengarriff has been highly favoured by nature, and possesses, in a pre-eminent degree, the conditions essential to a site for a winter residence."

Dr. Gilbart Smith, Physician to the Royal Hospital for Diseases of the Chest, London, thus speaks of Glengarriff as a winter health-resort. As will be noticed, he refers personally to the benefits he himself received here:—"I know many who have gained considerable advantage there, but I can from personal experience bear my testimony, as some years ago, when in a state bordering on con-

sumption, I derived very great benefit from a two months' happy sojourn at the Eccles Hotel.

"To that class of diseases of the chest which requires a winter residence in a warm and moist atmosphere, the climate of Glengarriff presents unrivalled qualifications."

Referring to the comparatively few number of cases of consumption at Glengarriff and the district surrounding it, it is worthy of note that in an interesting paper read by the Registrar-General for Ireland at the Royal Academy of Medicine in May, 1887, it was shown that there were two principal centres of excess of consumption on the eastern side of Ireland—namely, Belfast and Dublin—and the two principal centres of low prevalence on the western side were Mayo and Kerry; the rate of mortality from consumption in the Kenmare Union being as low as 9·2, and in the Bantry Union (in which Glengarriff is situated) only 11·8 per 10,000 of the mean population. It was furthermore noticed that where the rainfall was greatest the mortality from consumption was least, and that where the differences in temperature were greatest there it prevailed the most. The average annual death-rate from diseases of the respiratory organs during the years 1871 to 1880 in the Bantry Union was 23·8 per 10,000 of the population, and the death-rate from all causes during the year 1887 in the Glengarriff district was only 11·0 per 1,000—a low death rate.

It is generally accepted that the climate of any particular district is mainly regulated by the influence of the wind, and is furthermore influenced by its height above sea level. If the locality is sheltered from cold winds by ranges of mountains or extensive woods, and at the same time is open to winds blowing from a warm point, and has a southern aspect, it possesses all the advantages and conditions of a winter health-resort. Glengarriff possesses these favourable conditions in an eminent degree.

In noticing the climate of Glengarriff, mention has been made of the forward character of the vegetation. Frequently the observations founded on the thermometer are open in many ways to error, and from a variety of circumstances may deceive the most careful observer. It is not so with the vegetable world. It cannot so easily deceive; temperature is simply a matter of life and death to the world of plants, shrubs, flowers, &c., and they reveal much more than mere temperature, for they derive their very existence and luxuriance from moisture or dryness, from wind or calm, and from the character of the soil from which they take their growth.

A continued and careful observation made for some years by a reliable local observer of the trees, flowers, shrubs, and fruit, and their forward growth in the early spring months of February and March, afford a strong and an undeniable proof of the mildness and equability of the climate at Glengarriff.

It is much to be regretted that no regular and continued meteorological observations have been taken at Glengarriff; the nearest meteorological station is Valencia, which is about thirty miles distant and to the north-west. The mean annual temperature at Valencia for the years 1885, 1886, and 1887 was 51·1°; and from a series of observations made some three years ago the mean annual temperature at Glengarriff was 52·0°, which is higher than the mean annual temperature of Torquay—51·1°; Ventnor, 51·9°; and Bournemouth, 51·2°. The average annual rainfall is between 40 and 45 inches.

The harbour at Glengarriff is probably one of the most picturesque sheets of water to be met with in the South of Ireland. It is studded over with an innumerable number of verdure-clad islets, each one presenting peculiar beauties of its own. Chief amongst the number is the island of Garinish, surmounted by a fort and martello tower. Possibly the finest view of the bay and harbour is that from a hill on the Bantry side of Roche's Royal Hotel, from the summit of which a splendid view is obtained of the numerous islets, some thirty in number, the Eccles Hotel, Glengarriff Church, a large portion of Bantry Bay, the fine range of hills lying between Bantry Bay and Dunmanus Bay, including Mount Gabriel, the whole range of the Caha mountains, &c. Another equally fine view is that from the pleasure grounds in the rere of the Eccles Hotel. This affords a somewhat different aspect, equally as picturesque as the preceding. Within the grounds of Roche's Hotel are some charming walks, sheltered, and leading down to the water's edge, presenting here and there the most fanciful and picturesque views. There are prettily-situated waterfalls in the midst of a dense wood, the upper one, the smaller of the two, being crossed by a rustic bridge, which adds considerably to the beauty of the scene.

Glengarriff has two hotels, both exceedingly well managed and very comfortable. It is no exaggeration to say that it would be difficult to find their equal in the kingdom. They are both most beautifully situated, and possess every modern convenience that the most fastidious traveller can desire. During the early spring

months the Eccles Hotel, being situated in the valley and surrounded on all sides by hills, is perhaps the most suitable for the invalid; its sheltered position is more particularly an advantage to the bronchial sufferer at this season of the year.

Roche's Royal Hotel, charmingly situated within its own grounds and standing on an eminence, has the advantage as a residence at the other seasons of the year; its elevated though well-protected position renders it more bracing and invigorating, and not so relaxing; besides, it commands some of the finest views of the scenery around Glengarriff. At both hotels boarders are taken at a moderate tariff during the winter and spring months.

The absence of a resident medical man was up to the present time rather a hindrance to the recommendation of invalids to Glengarriff, but the guardians of the Bantry Union are now erecting a house for a doctor in the most central situation, so that in the future medical assistance will be near at hand.

There is a very good service of trains between Cork and Bantry, but the need of a direct communication at Cork between the two railway termini is very apparent. If this connection were made, it would be of very great advantage, and a decided boon to the travelling public.

Dr. Adderley, the local medical officer, informs me that the mortality from diseases of the chest is very small, and that cases of phthisis are very rare. Twenty-four of the thirty-two deaths registered during the year 1887 averaged seventy-nine years, and diseases of an epidemic character were altogether absent.

Glengarriff possesses in a superlative degree all the conditions essential to a health-resort of the first order, and, as a winter and spring residence, it has very few equals (if any) in these countries. Well might Thackeray exclaim—"What sends picturesque tourists to the Rhine and Saxon Switzerland, when at Glengarriff there is a country the magnificence of which no pen can give an idea? Were such a bay lying upon English shores, it would be a world's wonder."

Art. XX.—*The Springs and Baths of Ems.* By F. J. B. Quinlan, M.D., F.K.Q.C.P.; M.R.I.A.

The town of Ems is very beautifully situated in the valley of the Lahn, at a distance of about six miles from the Rhine. The valley, at the site of the town, runs almost exactly from east to west, between bold, wooded hills, and most of the houses are placed upon the northern side. In former times the river ran almost at the foot of these northern hills, with a wide strand between it and the southern slopes; but the channel has been forced back to the southern bank, and the space thus gained now forms spacious, shady, and elegantly laid-out public gardens. Ems can be very easily reached, either by a direct railway journey or by the Rhine. It is within a moderate carriage-drive from Coblentz, but those who do not wish to travel in the Rhine steamer can, by leaving Flushing in the morning mail—which is provided with hotel carriages—arrive at Ems in time for a late dinner. In fact, the journey from London can be thus accomplished by the Queensboro' and Flushing route within twenty-four hours. There is a permanent population of about six thousand persons, but in the season, which lasts from May to September, there is to be found a fluctuating crowd of from twelve to twenty thousand health-seekers, who find accommodation in the numerous hotels and lodging-houses, which are met with at all prices and to suit all tastes. To English-speaking visitors the Hotel d'Angleterre, with its complete staff of English-speaking servants, naturally offers great inducements, which is further enhanced by a perfection of sanitary arrangements not experienced in some other establishments in the neighbourhood. It has the further advantage of being lit with electric light. The principal springs are situated in a large building known as the Kurhaus, and well up in great abundance from fissures in the natural slaty and volcanic rock, and at temperatures varying from 90° F. in the Krähnchen to 120° F. in the Kesselbrunnen. These springs are very alkaline, producing a soapy feeling when rubbed between the fingers, and are highly impregnated with carbonic acid gas. They are pleasant to the taste, and do not produce any aperient effect—a result, however, which can be attained, if desired, by the addition of a little natural Carlsbad salts. The only springs originally employed were those of the Kurhaus on the north side of the river Lahn; but, as was pointed out nearly half a century ago by the late Dr.

Granville, those on the south side are chemically identical—in fact, the whole soil of the town is over some great subterranean reservoir; and even in the bed of the river the carbonic acid gas can be seen bubbling up in all directions. The most abundant of all the springs is one opened some years ago in the neighbourhood of the Southern Royal Bathing Establishment, and which formerly used to run waste into the river. It is a powerful spring, with a temperature of 97° F., and is pumped out all day by a steam-engine for the supply of the various royal bathing establishments, of which there are several in different parts of the town, so that the visitor has never any distance to go to his bath. After a day's vigorous pumping the water of this well sinks about six inches, but the moment the pump stops it rapidly regains its usual level. The number of available first-class baths is over two hundred, and they are models of cleanliness and neatness. The prices vary from one to two shillings, the difference being determined, not by the baths, which are all the same, but by the dressing-room accommodation. There are, besides, at the "Stonehouse," a number of cheap baths for the humbler classes, and gratuitous baths at the Hospital—a well-arranged institution of 50 beds, and which has its own well. This latter is a very interesting sight, and the thermal waters can be seen gushing from the rock clefts with a copious discharge of carbonic acid gas. On the south side of the river are numerous hotels and villas, but not to the same extent as on the north, and both banks are connected by several bridges. The climate of Ems is salubrious and not too warm, except from the middle of July to the same time in August, when the valley sometimes becomes oppressive. This has hitherto been the drawback of Ems; but last year this difficulty was completely removed. Above the hill on the southern side, known as the Malberg, is a plateau of magnificent forest land, extending for miles, and affording lovely views along the reaches of the river trending towards the Rhine. There in the hottest parts of the summer there is always pleasant shade and a refreshing breeze, and the tourist can walk or ride for hours along the winding forest paths. The difficulty, however, was to get up there, as the plateau could be reached only by an hour's walk or ride up the zigzag paths cut in the side of the steep Malberg; and after such an effort in the hot weather few felt inclined to go much further. Last summer a very wonderful railway was constructed straight up this steep slope for a length of three-quarters of a mile. As the gradient is

considerably more than half a right-angle, the tooth-wheel steam locomotives of the Swiss mountain railways would not answer, and rope traction had to be employed. Two carriages work upon two parallel lines of railway and are connected together by a wire rope passing round a large wheel at the Malberg summit. Under each carriage is a large iron tank capable of containing about ten tons of water. The process commences by filling the cistern of the upper car from a reservoir on the top of the hill, and, the passengers in both cars being seated, the upper car is let go, and it descends by its superior weight, drawing at the same time the lower car to the upper station. Arriving at the bottom the reservoir is run off, while that of the car at the top is filled; and this alternative process goes on all day. The first sight of this railway carriage running up the steep hill is truly alarming. Standing on one of the many bridges of the zigzag roads which cross the line, the spectator sees the car hundreds of feet below him; then it passes underneath him; and presently it is perceived hundreds of feet above him. The complete security of the transit, however, is speedily realised, for in addition to the ordinary brake, acting upon a central cogged rail, by which the car can be stopped at will, there is an ingenious self-acting contrivance, on the principle of the governor of a stationary steam-engine, known as the "emergency brake," which, if the car goes beyond a certain speed, instantly locks it to the central rail. In fact, when this railway was being tested by the German Royal Engineers, the car was sent down the incline safely without the support of the rope. This railway is an unmixed benefit to Ems, and every day thousands are to be seen mounting without exertion and in about four minutes from the warm valley to the cool and bracing woodlands. There also they are taken care of, for a fine hotel has been constructed at a point commanding a magnificent view of the valley of the Lahn. This hotel is in telephonic communication with the Hotel d'Angleterre, so that orders can be sent up and supplies called for when necessary. The Malberg woods are but one of the many beautiful resorts surrounding Ems, all within easy distance, reached by good roads, and affording a varied selection of charming excursions.

The most important consideration for the professional reader is to determine what are the beneficial effects of the Ems waters, and in what diseased conditions they can be most effectually employed. This question can be answered best by stating that

they are powerful sedatives of any irritation of the mucous membranes. In nasal and in pharyngeal irritation the waters are gargled, injected with a syringe, or used by spray. The latter must be employed with caution, as a very strong spray has been known to cause inflammation of the middle ear and even mastoid abscess. When judiciously employed the effects upon nasal and pharyngeal irritation are marvellous; in the latter case they are very usefully employed as a gargle. In vaginal and uterine catarrh the vaginal douche of mineral water, used at a proper temperature, is a complete specific, and cases of the most obstinate and chronic character are found to yield to it. This douche is most usually employed while in the bath. For chronic rheumatism and in some forms of gout the baths are very useful, and also in some skin diseases, notably in eczema. Finally, in chronic irritation of the larynx and in chronic hoarseness the mild spray is very beneficial.

The purposes for which the mineral waters are drank are legion. In torpidity of the liver, in congestion of that organ, in diabetes, and in soft gall stones, beneficial results are obtained; also in dyspepsia, although in the latter affection the credit must be shared with the scenery, exercise, and regulated hours and diet. The great employment of the waters for internal use is in irritation of the bladder and urinary passages, in prostatic disease, and in chronic uterine diseases. The local action of the waters, in the form of either baths, sprays, injections, or douches, affords decisive and accurately-pronounced results in the cases specified.

There is a considerable manufacture of Ems salt by the evaporation of the waters—a process which is accomplished by natural heat; and the salts, when thus evaporated, are exported and used as such, or in the form of lozenges made up with sugar and tragacanth. In the preparation of this salt an ingenious chemical nicety is exhibited. A quantity of the potassium, sodium, and calcium salts are in the condition of double carbonates, and in the evaporation the second atom of carbonic acid is driven off. When evaporated the dry salts are exposed to the action of carbonic acid gas obtained from a natural "blower" or gas well near the Kesselbrunnen, and the double carbonate condition is re-established. There is also a chalybeate well at Ems near the Victoria Hotel. The iron, however, is not combined with carbonic acid gas, and is practically inert. There are, moreover, in addition to the springs and baths of the "König Bade Anstalt" (Royal Bath Establishment), several private springs and baths on both sides of the river.

The principal of these are the celebrated "König Wilhelm's Felsenquellen," situated behind the European Hotel. This is an admirably conducted establishment, and quite equal to the official ones. It possesses baths, wells, and an excellent installation for the use of the waters by inhalation.

Although not connected directly with the springs, it would not be well to pass unnoticed the treatment of diseases of the lungs by compressed or by rarified air. The patient sits in a chamber in which the air is kept constantly changed, and is maintained at a pressure of an atmosphere and a half. This treatment is sometimes varied by the patient sitting in an ordinary apartment and inhaling compressed air, and exhaling into rarefied air. This treatment manifestly requires great caution, and the advice of experts who have made it their special study. Striking results, however, are to be seen obtained in emphysema, in chronic bronchitis, and in chronic congestion of the lungs, accompanied by general vascular stasis. In such cases the congested appearance of the face diminishes, and wonderful relief of breathing is attained.

Ems is a very pleasant place for the pursuit of health, or even for a holiday. The Cursaal (a different establishment from the Kurhaus, where are the springs, and one of the establishments of baths) affords all the comforts of a first-class club; and there is no lack of amusement from morning till night. For the medical visitor in search of information the best course is to put himself in communication with Dr. Geisse, one of the leading physicians of the place. Dr. Geisse speaks English like a native, and will guide him, as he did the present writer, through everything in Ems that is worth seeing, and will give him every scientific and practical information.

ENTERIC FEVER IN A MAN OF SIXTY-ONE YEARS OF AGE.

Dr. Desmos, of the Hospital de la Charité, reports a case of typhoid fever in a day-labourer, sixty-one years of age. All the symptoms of the disease were well marked, and after three weeks' stay in the hospital the patient left. The day after going from hospital he got cold in Vincennes, and returned to la Charité, and suffered, not only from bronchitis, but also from a profuse diarrhœa. All the symptoms of enteric fever again manifested themselves, and the fever ran its ordinary course, followed by a tedious convalescence.—*La France Médicale*, December 27, 1887.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Dental Caries, and the Prevention of Dental Caries. A Series of Papers Reprinted from the Journal of the British Dental Association. By Henry Sewill, M.R.C.S., and L.D.S., Eng. Second Edition. London: Baillière, Tindall, & Cox. 1888. Pp. 93.

Mr. Sewill, in his monograph, lays no claim to original scientific work; his object is rather to collect, from various authors and investigators, all that is known at present on the subject of caries of the teeth. Our author has evidently given the subject a good deal of careful consideration, and if his arguments fail to carry conviction with them on all points, it is not because he himself is not firmly convinced of their truth. Mr. Sewill is backed up by such authorities as Wedl and Tomes, and, we think we may add, by most men who have thought carefully on the facts demonstrated by microscopists during the last few years, in the view that dental caries is a process of disintegration, commencing invariably at the surface of the teeth, proceeding inwards, and due entirely to external agents—that is to say, the lime salts of the enamel and dentine are first dissolved out by the action of a weak acid, which is, at all times, readily produced in the mouth by the fermentation of food, then the dentinal tubules are invaded and broken down by micrococci, rod-shaped and oval bacteria, and short bacilli, while, finally, the *débris* of the tooth is washed away in the saliva. This is, briefly, the modern view of the subject as stated by Mr. Sewill; and he, very properly, appeals to the anatomy of enamel and dentine to show how absurd the idea is that such a process should begin with their inflammation. He further states that, during the whole process of caries, enamel and dentine are perfectly passive, and manifest neither pathological action nor vital reaction of any kind. This, we admit, is, to a certain extent, true, as many of the phenomena of caries may be produced in extracted teeth artificially; also

natural teeth, placed in the mouth as substitutes, have become decayed.

But, on the other hand, there are certain phenomena which occur frequently in caries, and which, we think, cannot be satisfactorily explained, on the supposition that caries has no pathology. For instance, the very frequent exquisite sensitiveness of decayed dentine, which is absent in the sounder tissue, lying between the decayed part and the pulp. This is a point that Mr. Sewill has not noticed, yet he surely must have observed it in practice. Also the complete arrest of decay that takes place in some cases. This latter process is explained by him in the following passage:—

"The decay occasionally commences on the grinding surface of a tooth, the external portion of which alone is of inherently defective structure. The occurrence is most common in honey-combed teeth. The decay spreads over the whole of this surface, which gradually breaks down, until the denser, better formed, dentine beneath the defective enamel is laid bare. The surface so exposed is often but little sensitive; and, being more or less used in mastication, constantly swept by the tongue, and washed by saliva, becomes, in time, worn smooth, and highly polished, and frequently endures for many years in that condition without any renewal of the disease."

All this is perfectly true, as far as it goes, but we contend that it does not in any way explain those cases in which—from the fact that the portion of the tooth involved cannot be used in mastication, and is to a great extent inaccessible to the tongue—the decay is arrested just as surely and shows no indication of proceeding further. Even at the risk of being classed by Mr. Sewill amongst the individuals who object to mathematical reasoning being pushed too far (*en passant* we would remind him that mathematical proof is not the only species of proof, and that there are many facts in medicine which we are obliged to accept without being able actually to demonstrate them), we would suggest that our knowledge of the minute anatomy of enamel and dentine is not so perfect as to warrant him in his once-for-all method of treating the subject of caries, and we think that Dr. Bödecker's observations on the existence of organic matter in enamel ought to have been treated otherwise by Mr. Sewill than with a contemptuous sneer. Dr. Bödecker's observations, if confirmed by other investigators, would quite explain some phenomena in connection with the transmission of sensations to the pulp, the cause of which at present is not quite clear.

Mr. Sewill quotes, at some length, the careful and elaborate investigations of Messrs. Underwood and Milles on the causation of caries, and states that they were followed and confirmed through all the steps of their research by Dr. Miller, of Berlin. Now, if our memory is correct, we think Dr. Miller's first paper on the subject appeared long before Mr. Underwood's, and, moreover, the latter stated in his communication that he and his colleague followed and checked Dr. Miller's work. Also, with regard to the agreement on essential points, which Mr. Sewill states to have existed between Dr. Miller and the London investigators, there was one point on which there was a decided difference which Mr. Sewill passes over, but which has a very important and practical bearing on the treatment of caries, viz.:—Dr. Miller stated that the portion of decalcified dentine invaded by micro-organisms was surrounded by a zone of softened tissue which was not yet affected by the microbes; while Messrs. Underwood and Miller were unable to find any portion of softened dentine which was not invaded by the micro-organisms.

Mr. Sewill states in more than one place that his monograph is intended chiefly for students, and that it is his intense solicitude for their orthodoxy in the matter which has induced him to write. He is also haunted by a morbid dread lest they should be befogged by the vapourings of certain pseudo-scientific writers—so much so that he lays down rules by means of which the perplexed student may gauge their work, and detect the truth amid misleading dross. One of these is the literary test. We hope that the students will not apply it too closely to Mr. Sewill's own writing or they will discover one passage, at all events, where he has successfully obscured his meaning. At page 8 we read:—

"A consideration of the anatomy of enamel and dentine—unique in the body—would, it might be supposed, be alone enough to show that they are incapable of anything like pathological action, that such action in enamel is inconceivable, and in dentine hardly possible."

This passage is perfectly clear in its meaning, but is it not apparently contradicted by the following passage from page 36, in which Mr. Sewill's meaning is somewhat obscure:—

"The anatomy of the tissues I have already briefly described; and we must not shut our eyes to the light which has been also shed on the subject (in regard to possibility of nutritive changes and pathological action in the tissues) by the full knowledge which we now possess of the histo-

genesis of enamel and dentine—the changes which take place in the tooth germ, by which its elements are converted into these tissues."

Passages are quoted from several authors which Mr. Sewill very properly and severely condemns, but we cannot in any way endorse his strictures on a passage from a paper by Dr. Miller, who raises a question in a most scientific and guarded way as to constitutional influences on the causation of what might be termed acute caries.

Mr. Sewill works himself into a frenzy over Dr. Miller's "supposition," and reiterates all his arguments on the complete impossibility of nutritive processes being carried on in enamel and dentine. This would be all very true and doubtless appropriate were Dr. Miller's views couched in different terms, but as they stand Mr. Sewill valorously belabours a shadow.

That Mr. Sewill's little book has reached a second edition is a fair proof that its merits have been discerned by the professional public; we doubt, however, if the dental student will ever derive from it more than a superficial knowledge of the subject of caries.

SOME PERIODICALS.

1. *Medical Communications of the Massachusetts Medical Society.* Vol. XIV. No. 1. 1887. Boston. Pp. 177.

2. *Transactions of the Medical and Chirurgical Faculty of the State of Maryland.* Eighty-ninth Annual Session, held at Baltimore, Md. April, 1887. Pp. 152.

3. *Transactions of the New York Academy of Medicine.* Instituted 1847. Volume V. 1886. Pp. 360.

4. *Twenty-third Report of the Trustees of the City Hospital, Boston, with Reports of the Superintendent and Professional Staff, Rules for Admissions and Discharges, Prospectus of Training School for Nurses, &c.* 1886. Boston: 1887. Pp. 98.

5. *The Middlesex Hospital. Reports of the Medical, Surgical, and Pathological Registrars for the Year* 1886. London: H. K. Lewis. 1887. Pp. 347.

6. *Thirteenth Annual Report of the London Temperance Hospital, presented May* 27, 1886.

7. *The Ceylon Medical Journal* (Published Quarterly). Nos. 1 & 2. Colombo: 1887.

8. *Annali Clinici dell' Ospedale degl' Incurabili in Napoli, Giornale di Medicina e Chirurgia.* Redatto per cura dei Professori Biondi G., de Giacomo A., Frusci F., Fazio F., Olivieri C., Senise T. Pubblicato dall'Amministrazione del Pio Istituto. Napoli: 1887.

9. *St. Louis Courier of Medicine.* December, 1887. St. Louis, Mo.

10. *The Polyclinic : a Monthly Journal of Medicine and Surgery.* Conducted by the Faculty of the Philadelphia Polyclinic and College for Graduates in Medicine. Henry Leffmann, M.D., Editor-in-Chief.

11. *The Sacramento Medical Times.* Edited by James H. Parkinson.

12. *Bullettino della Reale Accademia Medica di Roma.* Compilato dai Consiglieri Accademici delegati per la stampa. Prof. G. Colasanti e Prof. E. Marchiafava. Roma.

13. *The Brooklyn Medical Journal.* Vol. I. Nos. 2 & 3. 1888.

14. *The Journal of the American Medical Association.* Published weekly. Editor, N. S. Davis, M.D., LL.D, Chicago.

15. *The Medical and Surgical Reporter : a Weekly Journal.* Edited by Charles W. Dulles, M.D., Philadelphia.

16. *Gazette Hebdomadaire de Médecine*, Paris.

17. *La Riforma Medica, Giornale Internazionale Quotidiano di Medicina, Chirurgia, Farmacia, Veterinaria e Scienzi affini.* Redattore-capo Prof. Cav. Gaetano Rummo. Roma.

1. There is no surer sign of the zealous and successful cultivation of Medicine in a country than the abundance of periodicals devoted to it; and we deeply regret that Ireland, with its solitary medical Journal—and this not enthusiastically supported—cuts so poor a figure in comparison with Europe and America, where almost every considerable town—certainly every capital—maintains one or more professional periodicals—annual, quarterly, monthly, weekly, or even daily. America, especially, and, most of all, the United States, abound in this outcome of exuberant and healthful vitality; and we begin our cursory notice of a file of medical serials with the annual volume of the *Massachusetts Medical Society.* It contains nine articles, including the Annual Discourse. One of the most important of these is Dr. Bullard's paper on the "Relation of Tea-drinking to Disorders of the Nervous System," in which

the consequences of "taking a drop too much" of this very slow poison are set forth. To our surgical readers we commend Dr. Burrell's elaborate illustrated paper on immediate treatment of fracture of the spine by reduction and the use of the plaster-of-Paris jacket. Dr. Burrell does not claim originality for this method of treatment, but he may claim credit for a large measure of success. Of five cases thus treated by him or in his hospital, two died, "one is useless, and two have recovered." In sixteen cases, including these, in which the jacket was applied not later than the tenth day after the injury, three died, three were not benefited, and ten were greatly improved. Immediate correction of the deformity is of great importance in order to anticipate inflammatory softening of the cord. The author concludes his paper thus:—

"My own belief regarding the status which the procedure should occupy in Surgery is, that it will occasionally be a life-saving measure; that it should be applied under anæsthesia in all cases of fracture of the spine, which are not conclusively known to be irremediable; and that apart from the chance of recovery offered to the patient by this means, it will almost invariably make the patient more comfortable, in that he can be handled more easily."

2. The Medical and Chirurgical Faculty of the State of Maryland is in the ninetieth year of its *cruda viridisque senectus*. Its eighty-ninth annual session was held at Baltimore last April, and the *Transactions* show that its "natural force is not abated." They include a Presidential and an Annual Address, six Reports of Sections, and two "volunteer papers." Prof. William H. Welch devoted the annual address to "modes of infection," and it will be read, as it must have been heard, with great interest. The truth of the germ-theory of disease is assumed at starting. "There is," he says, "doubtless, no one competent to form an opinion on the subject who does not believe that certain infectious diseases are caused by micro-organisms, and that it is a logical inference that the other diseases of this class are produced by parasitic organisms—although there may be differences of opinion as to how far this doctrine has been proven for individual diseases." He gives as the accepted classification of communicable diseases that which distinguishes the *contagious*—in which the *materies morbi* multiplies within the body, and is capable of transmission from the diseased to the healthy body; the *miasmatic*—the miasm being produced outside the body, not multiplying within it, and not eliminated

from it in a condition capable of producing infection; and the *contagious miasmatic* (including cholera and enteric)—in which the patient "throws off from his body a poison, a micro-organism, which at the time of its discharge is not capable of producing the disease, but which, under favourable circumstances, undergoes outside of the body some unknown metamorphosis by which it acquires this power." The transmission of cholera is discussed at considerable length, and this portion of the address is specially worthy of attention. Before leaving Dr. Welch we must quote a passage on predisposition, which contains a useful caution:—

"While I would not by any means ignore the importance of hereditary predisposition to tuberculosis, is it not probable that cases are often included in this category which do not belong there? When we think of the especial dangers of infection to which the offspring of tuberculous parents are exposed from their youth upwards, of the likelihood that a child will follow an occupation which has favoured the development of phthisis in a parent, and of the frequency with which the concurrence of the disease in ancestor and descendant is mere coincidence, it is apparent that we are in danger of assigning to heredity a larger part in the causation of tuberculosis than it deserves."

A short paper by Dr. W. Brinton gives some figures illustrative of the beneficial effects of the use of antiseptics in obstetric practice. We briefly summarise:—In the great Vienna Hospital the mortality has been reduced to less than one-half per cent.; in the Emergency Hospital, New York, nearly 1,000 cases were treated in four years, without death from septic causes; the Boston Lying-in Hospital had a mortality of 3½ per cent., and was three times closed in five years, on account of puerperal fever, while, since the systematic use of antiseptics, 681 women have been delivered, with but two deaths from sepsis; and similar results are reported from New York, Philadelphia, and Prague. The antiseptic principally employed is the bichloride of mercury, one part to 2,000, 3,000, or 4,000 of water, except for instruments, for which carbolic acid is preferred.

3. No medical association in the United States enjoys or deserves a higher reputation than the New York Academy of Medicine, and it is to be regretted that its published *Transactions* are so few. It was instituted in 1847, and has produced but five volumes. Its gestation, like the elephant's, is slow. The fifth volume contains seventeen papers, including Dr. Fordyce Barker's

Valedictory, and Dr. A. Jacobi's Inaugural, Addresses. It opens well with a valuable essay on sensory aphasia, illustrated by twenty-four cases, by Dr. Amidon, of New York, which, though read so far back as November, 1884, has lost none of its interest or value. Sensory aphasia—word-deafness, word-blindness, or both combined—is sharply distinguished from the motor aphasia, whose originating lesion was located by Broca. In "word-blindness" the patient can talk or write spontaneously, but cannot understand written or printed speech, though he may be able to read it aloud correctly. "All visual impressions connected with language, except gestures, fail to be transformed into visual verbal images." The lesion which produces this condition is situated "about the posterior extremity of the fissure of Sylvius, the inferior parietal lobule, the angular gyrus, and the second occipital convolution of the left side, or parts subjacent to them." In "word-deafness," also, the patient can talk or write spontaneously, but cannot understand articulate speech. All auditory impressions connected with language fail to be transformed into acoustic verbal images. Here the lesion affects the first and second temporal convolutions of the left side, or subjacent parts. These are, respectively, the visual and auditory areas of the brain. Of the twenty-four cases reported, "eight, with lesion of both visual and auditory regions of the left hemisphere, had 'word-blindness' and 'word-deafness;' two, with lesion of the visual area, had 'word-blindness;' and fourteen, with lesion of the auditory area, had 'word-deafness.'" Dr. Jacobi's Address contains an amusing protest against "bacteriomania" in its acute stages, when everyone strives to catch a bacillus for himself and rushes into print to proclaim his discovery; but we cannot quote, as we should wish, and we can only mention a learned and most interesting paper by A. C. Merriam, Ph.D., Professor of Greek in Columbia College, upon Medicine in Ancient Greece, as revealed by inscriptions in or about temples of Æsculapius.

4. From the *Twenty-third Report of the City Hospital, Boston* (1886), which contains 425 beds, we take the following figures:—5,368 in-patients were treated during the year—2,757 medical, 5,202 surgical, 87 ophthalmic—at an average cost of thirty shillings a week. An income of £6,480 was derived from paying patients. This is larger than previous receipts, payment for board being now collected from non-residents, and from residents who are able to pay. It is illustrative of the progress of Hibernicisation, to which

even Boston has been forced to succumb, that nearly 53 per cent. of the in-patients were Irish. We observe, with some amusement, that petitions were sent in to the Trustees, praying "that homœopathic treatment may be furnished at the City Hospital for those who prefer it." The Trustees (in thirty-two printed pages) "unanimously determined that it was unadvisable to grant the petition."

5. From New England to Old England; from Boston to London. The Report of the Middlesex Hospital for 1886 is before us, furnished by the Medical, Surgical, and Pathological Registrars. Here the admissions were 3,123. We see that 24 cases of enteric fever were treated with antipyrin, with not very encouraging results. Ten mild cases did well—but not better than if they had been let alone. In one severe case the drug had a fair trial—and was convicted of incompetence. It is stated that it is "an efficient means of reducing temperature in the large majority of cases;" *but*, "as a general rule, a dose of brandy was given with each dose of antipyrine." The surgical Report is chiefly occupied with cancer, on which subject it conveys much statistical information.

6. The *Nineteenth Annual Report of the London Temperance Hospital* does not throw much light upon the question which it was, we presume, founded to solve. Many years must pass, and many cases must be treated without alcohol, before "it can be shown that the disuse of alcohol as a medicine is not detrimental to those who enter a hospital for medical or surgical treatment." Of the 672 in-patients treated during the year, the vast majority would not have had alcohol prescribed in any hospital, and their cases prove nothing either way. For demonstration it would be necessary to select cases in which an ordinary practitioner would have exhibited alcohol, and to compare the results of non-alcoholic treatment with average results in similar cases in ordinary hospitals—results including, not mortality merely, but duration of convalescence. Can this be done? It is not attempted here. The only case of which particulars are given is not favourable to the anti-alcoholists; although attention is drawn to it in the Report as the solitary instance in which alcohol was prescribed "without any apparent beneficial result." A man was admitted with "deep-seated inflammation of the whole of the upper arm." The inflamed tissues were divided and some pus discharged. Three days later "the whole of the tissues of the arm and side of the chest and

breast were infiltrated with purulent matter," and other incisions were made. Next morning, after a bad night, "his condition was very serious;" extremities were cold, pulse was scarcely perceptible. *Then* brandy was ordered. The patient had three ounces in the last hour and a half of his life, and "there was no apparent beneficial result." There was no inquest.

7. The *Ceylon Medical Journal* is a new venture, and we wish it prosperity. The contents of the numbers which have reached us are varied and interesting; and if this standard can be maintained the Journal will deserve, if it cannot command, the success which predecessors in the island have failed to obtain. We fear the high price may be an obstacle to longevity.

8. The *Annali Clinici dell' Ospedale degl' Incurabili* at Naples is a hospital journal, published quarterly. The number before us (July–Sep., 1887) contains nothing of special interest to foreign readers, but is creditable to editors and professors.

9. The *St. Louis Courier of Medicine* is a monthly journal, published at St. Louis, Chicago, and Atlanta, for the Medical Journal Association of the Mississippi Valley. It gives nearly 100 octavo pages of excellent matter, excellently edited and printed, for a shilling. In last December's number we noted two things for mention. One is a peculiarly nasty form of tobacco consumption which prevails amongst the negroes and the lower class of whites in the South. It is called "dipping snuff." "They chew the end of a twig so as to form a rude brush, then they continually dip this into a small box of snuff and rub it over gums and teeth. The gums pushed down on the teeth are red and inflamed, from tobacco lodged between them and the teeth, and the whole pharynx is inflamed." At a meeting of the Obstetrical and Gynæcological Society a discussion took place on the effect produced by maternal impressions on the fœtus. We observed with some surprise that the general opinion ran *against* the possibility of fœtal malformations resulting from the mother's impressions.

10. We have noticed more than once, and favourably, the *Polyclinic*, a monthly journal of medicine and surgery published in Philadelphia. From a paper in the November number we learn that leprosy is increasing in America:—"In addition to the fact that

centres of leprosy exist in Canada, in Minnesota, in Louisiana and in California, several cases have been reported as occurring *de novo* on American soil in persons who have been born in and never left the country." The author, who reports three cases, states his belief that the disease is contagious, but in a slow and uncertain manner.

11. *The Sacramento Medical Times* is in its vigorous childhood, and growing in size. It begins the second year of its existence with an additional sheet. The contents of the numbers we have seen are chiefly of local interest only.

12. The *Bullettino* of the Royal Academy of Medicine of Rome contains the transactions of the Academy itself, and summaries of the doings of the other principal medical societies of Italy.

13. We have received some numbers of the *Brooklyn Medical Journal*, which commenced its existence with the new year. The February number, which is before us, is very creditably got up, and contains a large percentage of original matter, commencing with a *résumé* of the uses and dangers of ergot by Dr. Hyde. We cannot but commend the diligence and industry of the author, though we must confess that he has failed to convince us that ergot is so extremely dangerous as he seems to think. Our old friend, transverse fracture of the patella, finds itself once more the subject of a paper, although we thought that the capabilities of language were exhausted in describing methods for producing bony union in this much-bewritten fracture. The practical paper of Dr. Butler on "Intrasusception" is more than worth the price of the number, and possesses the charms of brevity and clearness.

14. The *Journal of the American Medical Association*, a weekly, has completed its ninth half-yearly volume. It is published at Chicago. The number for 31st December gives a complete list of members of the Association, numbering about 3,600. Turning over some pages of the journal we came upon the following piece of information, which was new to us. "It seems that Dr. Howell [*sic*], who is in constant attendance upon the Crown Prince at San Remo, as the representative of Sir Morell Mackenzie, administered specific remedies with the idea that the affection was specific. It is asserted that the Crown Prince's condition began to improve under this treatment, that the profession is now accepting Dr.

Howell's diagnosis and treatment as correct, and that it is thought that the Crown Prince will probably be cured." This was written in January last. From correspondence in another number we learn that there is a "great mind-healer" in Boston, one "Dr." Dresser. "At all events this is what the newspapers tell us occurred the other day in the case of a little girl, 11 years old, in Brooklyn, who was 'seriously ill with remittent fever.' 'Three eminent physicians' assured the parents that there was nothing to be done for the child except to see that she had good nursing. In spite of this advice, however, she continued to grow worse, until she was 'actually at the point of death.' In this emergency a telegraphic message was sent to 'Dr.' Dresser, in Boston. For an hour she remained unconscious, during which time, we are informed, the great mind-healer was 'working on her,' and 'in half an hour she was as well as ever.'" We dare say this kind of thing could be matched at home.

15. The *Philadelphia Medical and Surgical Reporter* has lived for more than thirty years, and is still in vigorous youth. Some of its success is due, perhaps. to its adaptation to every taste; even the lover of pleasant jokes having a special "Humor" column provided for him. Overmastering fear of editorial severity prevents our giving any specimens from this department; but glancing over last year's file we noted some passages for mention. With reference to the supposed deterioration of the American in size, weight, and condition, it occurred to a Mr. Atkinson to inquire of merchants dealing largely in ready-made clothing, and he gives the results in *Science* (Nov. 11, 1887). Information was obtained from Boston, Chicago, New York, Baltimore, Detroit, Texas, and Montreal. The average measurements were—38 inches round the chest; waist, $33\frac{1}{2}$; length of leg, inside, $32\frac{1}{2}$; height, from 5 feet $8\frac{1}{2}$ inches to 5 feet 9 in New England, up to 5 feet 10 in the South and West. The average weight deduced ranged from 155 to 160 pounds. These figures do not show deterioration. We mentioned above the fact that leprosy is supposed to be increasing in the United States. We find here that, in one hospital in New Orleans, 4 white and 1 coloured lepers were treated in 1881; in 1882, 4 whites; in 1883, two whites and 1 coloured patient; in 1884, 2 whites; in 1885, 6 whites and 1 coloured person. All were treated in the ordinary wards without fear or fact of contagion. A Mississippi practitioner publishes

two cases in support of the ecbolic action of quinine; but they do not decide the question.

16. The Paris *Gazette Hebdomadaire*, in its thirty-fifth year, is too well known to need remark. A recent issue contains some interesting figures illustrating the effect of sanitary measures upon the prevalence of enteric fever. In Vienna this disease, formerly common, has become rare—0·11 per thousand of population. Since 1874 only pure water from springs has been used in the city, except in a few houses which obtain their supply from wells. Examining the enteric fever statistics from 1851 we find two sudden "drops" in the mortality—one in 1859, after improvements in the sewers; the other in 1874, after the introduction of the pure water supply. In 1859 the death-rate from enteric fell from about 2·0 to 1·2 per 1,000, and in 1874 to 0·11. Again, the percentage of deaths from enteric fever to sick, since the introduction of pure water, has been 1·26 in houses enjoying the improved supply; 3·02 in those not so favoured.

17. We have classified the periodicals which we have noticed hitherto according to their "periodic times"—from annuals down to weeklies. We will conclude with a daily—the only daily journal in existence, so far as we know, devoted exclusively to medical and kindred subjects. The experiment was a bold one, and has proved successful. *La Riforma Medica* is in its fourth year. Started in Naples, it is now published in Rome. For 20 lire, annual subscription, it supplies daily six large pages of professional matter, besides two of advertisements. The quality of the contents is excellent, including an elaborate original paper on the variations in sphygmographic tracings formed by the pulse in normal sleep and under the influence of narcotism by certain drugs. The editor, Prof. Gretano Rummo, is one of the authors of the paper.

The Bombay Materia Medica and their Therapeutics. By RUSTOMJEE N. KHORY, M.D., Brux. Bombay, 1887.

THIS book, printed at a native press, is written by a native who holds a high professional position, and was at one time Lecturer in the Grant Medical College, Bombay. Its contents scarcely admit of review, but the book appears to be carefully executed, and it

ought to be most valuable to all who desire acquaintance with the wide subject of Indian Materia Medica. It is a compilation from several standard Persian, Urdu, and Sanscrit medical works, and aims at giving a popular but accurate account of the native Materia Medica of part of India. The synonyms of the bazaar drugs are expressed in English and in Guzerati characters, and the vernacular names in other languages are printed in Italics. Dr. Khory deserves the thanks of the profession for the laborious task he has so well fulfilled, and we have no doubt that his book will be largely used as a book of reference.

On the Tapetum Lucidum and the Functions of the Fourth Pair of Nerves. By Henry Lee.

These papers are reprinted, the first from the Medico-Chirurgical Transactions, the second from the *Lancet*. Mr. Lee believes that the tapetum lucidum serves as a reflector, so as to illuminate the objects at which the animal looks. He shows that the arrangement of the tapetum in the different classes of animals is such as to be most in accordance with their respective instincts and wants.

The paper on the functions of the fourth pair of nerves would be more appropriately entitled on the functions of the oblique muscles. These muscles are supposed to serve two purposes—first, to rotate the eye-ball in its antero-posterior axis; secondly, to compress the globe, so as to alter the focal length of the eye. In animals who possess a tapetum lucidum the degree of compression necessary to focus the light reflected from the interior of the eye on an object will give the animal an idea of the distance of the latter, even when he can make use only of monocular vision.

An Introduction to Practical Organic Analysis; adapted to the Requirements of the First M.B. Examination. By George E. R. Ellis, of University College, London; Science Master of Haversham Grammar School. London: Longmans, Green & Co. 1888.

The medical student of to-day has so many subjects on his list that he naturally seeks for a small book on each subject, and eschews all ponderous volumes. Unfortunately, small books are too frequently wanting in that amount of information which unsympathetic examiners demand of the unhappy candidate.

Occasionally, however, an author appears who possesses the gift of putting a great deal of information in few words, and so relieving the student from unnecessary labour. This gift is possessed by Mr. Ellis, and to the student who is pressed for time, and who is not reading an honour course, we commend this book as a good and safe guide amidst the difficulties of the practical chemistry of the carbon compounds.

The Medical Annual and Practitioner's Index; a Work of Reference for Medical Practitioners. 1888. Sixth Year. Bristol: John Wright & Co. London: Hamilton, Adams & Co. Edinburgh: Young J. Pentland. Calcutta: Thacker & Co. Glasgow: A. Stenhouse. New York: George Putnam's Sons. Melbourne, Sydney, and Brisbane: Geo. Robertson.

THE phenomenal success of Messrs. Wright's *Annual* last year told how much the profession appreciate a really good year-book, and this year we are agreeably surprised to find that the *Annual* is not only equal, but actually superior, to its predecessor.

It is very seldom we meet a book to which we can give such unqualified praise as we can to the one under notice—it is at once a retrospect and a work of reference on modern therapeutics. The most approved treatment in any given disease is told by gentlemen whose names are a sufficient guarantee of the soundness of the opinion. The practitioner is not left to find his way amidst a mass of confusing and contradictory excerpts, but has, in clear, terse language, the decision of a competent specialist. The *Annual* might fairly be described as a systematic text-book of modern therapeutics, in which the different articles were written by some of the most distinguished members of the profession. Nothing seems wanting that could aid in the duties of a busy practice. The articles treat of every subject—from a painless corn cure to the latest theories on the treatment of tubercle.

"New Remedies" occupy 107 pages, and their alphabetical arrangement greatly facilitates reference. We are sorry to find, however, that "Stenocarpin" finds a place in the list—an error which when told the sole fault of the book is known. The summaries of the British and foreign papers that have appeared during 1887 are particularly well done, and those who have to read and condense current literature know that to judiciously select and give good summaries of medical literature is no light task. Hundreds

of worthless communications have been consigned to oblivion, and nothing of importance has passed unnoticed.

Almost 400 pages are given to "New Treatment," and in the great majority of cases the prescription is written in full.

Where every article is marked by great ability and careful editing, it is almost invidious to especially draw attention to one in particular; nevertheless, we cannot but mention the pleasure we derived from reading the article on "Electricity," by John W. Taylor, F.R.C.S. Since Dr. Apostoli read his paper at the Dublin meeting of the British Association the therapeutic use of electricity in uterine affections has had a great interest for gynæcologists, and to them we particularly commend Mr. Taylor's article.

"New Inventions" includes the most recent improvements in surgical instruments and soforth, and is a much-needed section in an Annual.

Nothing has been left undone to make this Annual perfect. Binding, paper, print—everything tells of careful supervision and exhibits excellence, and we heartily recommend to our readers the book as incomparably the best year-book of medical science published. It is not only a credit to the editors and publishers, but it reflects credit on British Medicine.

Medical Galvinism; an Introductory Lecture delivered to Nurses and Masseuses. By Herbert Tibbits, M.D. J. & A. Churchill. 1887.

We are sorry to find Dr. Tibbits publishing such poor stuff as this—adorned with plentiful 'Italics, notes of admiration, and poetry. Let our readers judge for themselves. Speaking of the galvanic cell he tells us (p. 22): "This very simple arrangement has gone far to revolutionise the world. *At any rate, it has given us electro-plated spoons and bad half-crowns instead of silver, together with telegrams and other nuisances.*" (The Italics are the author's). Again, "Faradism is sometimes called the secondary current, because it arises in the second wire." (!)

The last extract we shall give must secure universal attention, and we commend it to the impecunious:—

"In these hard times let us glance for a moment at the £ s. d. aspect of a masseuse alone, not to mention the combined electrician and masseuse. Lady John Manners, in a recent number of the *Nineteenth Century*, writes

that from a certain institution in London the sum asked for a masseur's daily attendance of one hour at a patient's house was £4 4s. per week, and that some wealthy families retain masseuses as a part of their regular establishment. A patient of mine informs me that her masseuse told her the other day that they gave a dance, and drank four dozen champagne at eighty-five shillings a dozen; and the masseuse asked my patient '*Could she recommend her a wine merchant where good champagne could be bought cheaper?*'" (P. 15).

De L'Épilepsie Jacksonienne. Par le Dr. E. ROLAND, Médecin des Asiles "John Bost," de Laforce (Dorgogne). Paris: aux Bureaux du Progrès Médical, A. Delahaye et E. Lecrosnier. 1888. Pp. 192.

THIS work is altogether a compilation, but, nevertheless, is one which will prove of much service to those who have not time or opportunity to consult the scattered, and, with difficulty accessible original memoirs, in which the literature of Jacksonian epilepsy is contained. In Dr. Roland's book will be found a most complete account of all that is known at present of cortical epilepsy, its pathology, morbid anatomy, symptomatology, diagnosis, and treatment. We would most cordially commend it to the attention of all those who are interested in nervous diseases.

AN EXPERIMENTAL STUDY OF THE EFFECTS OF PUNCTURE OF THE HEART IN CASES OF CHLOROFORM NARCOSIS.

DR. B. A. WATSON, of Jersey City, details the results of sixty experiments made on dogs. The animal was chloroformed until the heart had ceased to beat, then the organ was punctured with an aspirator needle. In only two cases did the heart fail to respond, but in most instances the beats were only temporarily restored. In ten cases, however, recovery took place. Only where the vena cava was wounded did hæmorrhage into the pericardium hasten death. The author arrives at the following conclusions:—1st. Puncture of the heart, especially the right ventricle, stimulates muscular contractions, and may be advantageously employed in the treatment of this morbid condition (*i.e.*, chloroform narcosis). 2nd. The best results are obtained where abstraction of blood from the cavity of the ventricle is combined with the stimulating effects produced by the entrance of the aspirator needle. 3rd. Puncture of the right ventricle is a safer and more efficient operative procedure than puncture of the right auricle.—*Trans. of the American Surgical Society*, May 13, 1887.

PART III.

HALF-YEARLY REPORTS.

REPORT ON FORENSIC MEDICINE.

By H. C. Tweedy, M.D., Dubl.; M.K.Q.C.P.; Diplomate in State Medicine, Trin. Coll. Dubl.; Fellow and Examiner Royal College of Surgeons; Physician to Steevens' Hospital.

1. Anatomic Changes of the Brain in Senile Dementia.
2. Puerperal Insanity.
3. Suicide in relation to Insanity and Life Assurance.
4. Hermaphrodism.
5. The Post-Mortem Imbibition of Poisons.
6. Poisoning by Cocaïn.

ANATOMIC CHANGES OF THE BRAIN IN SENILE DEMENTIA.

In a preliminary note in the *Vratch*, No. 1, 1887, p. 8, Dr. S. A. Belakoff, of St. Petersburg, says that following the suggestion of Professor J. P. Mierzejewski, he has examined the brains of three women and a man, aged from sixty-four to seventy-five, suffering from senile dementia. Dr. V. Idelson thus sums up his observations:—

The Macroscopical Appearance.—In all, the cranial bones were found to be more or less solidified, the diploë being absent at some spots altogether. The dura mater (in two cases) was adherent to the vault; the arachnoid and pia were thickened, firm, extensively opaque, here and there adhering to the gyri; the Pacchionian granulations strongly developed. The convolutions were pretty narrow, the fissures between them wide, the layer of the grey substance very thin, the basal vessels (especially basilares, carotides, and Sylvii) highly sclerosed even in their minute ramifications. The brain without membranes weighed respectively 1,095, 1,080, 1,090, and 1,100 grammes. The lateral ventricles were distended by serous fluid, the vessels of their walls dilated, the chorioid plexus sometimes contained cysts of the size of a hemp-seed. The fourth

and fifth ventricles presented only a moderate amount of distension. The grey substance of the cerebral ganglia was strongly pigmented. The striæ acusticæ and caudate nucleus appeared very prominent.

The *Microscopical Examination* of the cortical substance of convolutions revealed a dilatation of the subadventitial spaces, with rosary-like swellings containing fat, pigment, and blood-corpuscles. The vascular walls were infiltrated with lime-salts and considerably thickened, the lumen being sometimes slit-like. Here and there miliary aneurysms or alternating constrictions and dilatations could be traced along the course of vessels. Fatty degeneration of the vascular walls, especially pronounced at the points of ramification, represented a constant phenomenon. In a close proximity to vessels there were seen fairly sharply circumscribed regions of "plasmatic exudation"—that is, patches which took in readily carmine, and within which the neuroglia was markedly softened and the vessels overfilled with blood-corpuscles. The nerve-cells were changed in a striking degree. The alterations consisted in the disappearance of the usual distinct limitation between individual layers of the cortex, in fatty and pigment degeneration of the protoplasm, in a disfiguration or disappearance of processes and pyramidal outlines of the cell; and, later on, in the disintegration both of the protoplasm and nucleus. Ultimately the nerve-cell is replaced by a more or less compact aggregation of fatty and pigment granules, or by a lump of a granular amorphous mass. The pericellular spaces were always very large. The nerve-fibres were also attacked by fatty degeneration with subsequent disintegration. The most intense regressive changes were found in the frontal lobes and psycho-motor region. The amount of degeneration of the nerve-elements was directly proportionate to that of vascular changes; the greater the latter, the more extensive was the plasmatic exudation, and the more pronounced the atrophic changes that were met with. Generally, "atrophy goes parallel not with the patient's age, but with the duration of disease and with the brain's weight."

PUERPERAL INSANITY.

In a review by Dr. Sutherland of a recent work on this subject by A. Campbell Clark, M.D. Edin., Superintendent of the Glasgow District Asylum, Bothwell, the following points deserve notice:—

Dr. Clark commences by designating the usually assigned causes

of puerperal insanity as mere outposts or coincidents. Such are heredity, previous attacks, epilepsy, diseases of pregnancy, the use of instruments, accidents of labour, exposure to cold, and so forth.

That most powerful factor, toxæmia, may be the result of—(1) diminished, arrested, or altered secretions and discharges; (2) septic absorption; (3) zymotic infection; (4) alcoholic excess; and the first of these may be secondarily induced by any of the others.

The cerebral conditions preparatory to an outbreak are—1, acuteness of sensory impressions; 2, a state of nervous tension; 3, emotional irritability; 4, loss of memory; 5, diminished self-control; 6, restlessness; 7, sleeplessness.

In 7 cases out of 40 there was a history of hysteria, and in 6 others of previous attacks of insanity, 3 of which were puerperal. The insanities of puberty and early womanhood are very apt to relapse, and they are grave antecedents in puerperal cases.

Heredity may be studied in (*a*) the history of progenitors and of collaterals; and (*b*) in the health of the progeny.

Intemperance, cancer, and uterine disease in the ancestors play a part in causation.

Where an hereditary history of insanity could not be traced in preceding generations, heredity became almost a certainty by reason of the collateral evidence of insanity in other members of the same family, insanity or an insane diathesis being known in one or more sisters of six cases.

In the health of the progeny there is often a foreshadowing of the future nervous history of the mother, a latent neurosis in the latter finding early expression in the child years before there is any suspicion of mental disease in the parent.

Putting aside primiparous cases, which numbered thirteen out of forty, and seven multiparæ, whose histories are in this respect defective, it was found that out of the remaining twenty multiparæ nine showed in their families distinct evidence of neurotic disease. Idiocy, imbecility, epilepsy, acute hydrocephalus, and cerebral congestion were the varieties recorded, hydrocephalus being the most frequent. This represents 45 per cent. of gross neurosis in the progeny of multiparous cases.

Twenty-six out of a total of thirty-eight cases had a basis of heredity. Dr. Batty Tuke found heredity in twenty-two out of seventy-three cases, and he found that in a greater proportion of cases it exists on the female side of the family.

SUICIDE IN RELATION TO INSANITY AND LIFE ASSURANCE.

The subject of suicide in its relation to insanity has been well treated in a lecture by Dr. John J. Reese, Professor of Medical Jurisprudence in the University of Pennsylvania, published in the *American Medical News* of Jan. 21, and has been thus summarised by Dr. W. W. Ireland:—

Dr. Reese argues at length against the notion that suicide is in itself a proof of insanity. It seems surprising that anyone acquainted with history should hold such a view. There is, however, no doubt that a large proportion of those who take away their own lives are really insane. From the statistics furnished by Morselli in his classical work, *Il Suicidio*, it appears that this proportion is about one-third. In Italy, he tells us, 50 per cent. of all the suicides are due to pathological causes. Pellagra is a very common cause. Melancholia is the form of insanity in which attempts at self-destruction are most to be dreaded. Such patients sometimes reason forcibly upon the wisdom of putting an end to a life weighed down by insupportable misery. Such cases add much to the cares of medical superintendents of asylums, though they are sometimes rewarded by being able to restore their patients to their families in a sane and cheerful state of mind.

As might be expected, the frequency of suicide is much influenced by religious belief. Amongst the adherents of those faiths which strongly condemn self-murder it is not so often met with. Morselli's statistical tables clearly show that it is rare in strictly Catholic countries, such as the Spanish Peninsula and Southern Italy.

The frequency of suicides is steadily increasing in Europe and North America, and this is no doubt owing to the spread of materialistic views. Where death is considered the end of all suffering, the last and most thorough opiate to misery, it is not surprising that it should be sought by those who have given up all hope of escape from disease and misfortune. Yet so great is the love of life, and so inexhaustible is hope in the human breast, that it is not at all likely that suicide could ever become very frequent, even if Materialism were the universal belief. It is in great cities like Paris, Berlin, and Vienna that the proportion of suicides is highest. Dr. Reese has called attention to some instances in which men have deliberately insured their lives for large sums, and then made away with themselves in order to provide for their

families. He mentions the celebrated Dwight case, which occurred about two years ago at Binghamton, N.Y., involving several hundred thousand dollars of insurance money, in various offices:—"This case has been tried in the different courts, and we now hear that it has been recently compromised. The other case is that of Tyler, of Norwalk, Conn., which occurred within the present year. This man, having spent a fortune in profligate living, applied within the space of six months for an aggregate sum of 400,000 dols. of insurance on his life, having previously announced his intention to effect this large insurance for the benefit of his various creditors, and then to kill himself. By false statements to the offices to which he made application, he succeeded in his design. He then writes to his mother of his intention to take his life; after which, he comes to Philadelphia; from which city he again communicates to a friend his suicidal purpose, under an assumed name; and, finally, he returns to Norwalk, and is found in the morning dead in his bed, from an overdose of morphin, leaving a memorandum upon his table. The majority of the insurance companies, I am informed, are defending their cases in the courts upon various grounds—amongst others, on that of conspiracy between the deceased and the creditors."

"In each of the above cases to which I have made brief allusion (observes Dr. Reese) there are certainly very strong reasons to suspect voluntary suicide to have been the true cause of death, and that, too, without the slightest suspicion of insanity on the part of the deceased.

"You will notice a most significant fact in these and in analogous cases—viz., that the insurance on the life of the person had been but lately effected, and usually for a considerable amount, and in various offices; and, further, that only one or two premiums had been paid before the suicidal death occurred.

"Now, I do not think that we need be much surprised at such occurrences. Why should not such an individual, pressed down by the burden of some enormous debt, which he has been vainly hoping to pay (if restrained by no belief in, or dread of, a future judgment)—why, I say, should he *not* embrace the tempting offer to insure his life for an amount which will not only repay his indebtedness and rescue his name from dishonour, but at the same time save from poverty and want those whom he loves better than himself?"

Dr. Wynn Westcott, in his book upon suicide, gives some infor-

mation about the attitude of British assurance companies to the suicide. In six offices the policy is rendered void by suicide, though the money paid in need not be forfeited. In the prospectuses of nine companies no mention of suicide is made, but in the majority of the companies the policy is not made void by suicide after payments running from one year up to five.

HERMAPHRODISM.

Professor Brouardel very carefully epitomised the characteristics of this curious condition in a clinical lecture which he recently delivered. Dr. Alfred S. Gubb thus summarises his remarks :— He pointed out that hermaphrodism can be complete only so far as the internal organs are concerned. An individual may have one ovary and one testicle, but not a scrotum and a vulva, for it is evidently impossible to have a join and a separation simultaneously. Pseudo-hermaphrodism generally consists of an arrest of development for the male sex (hypospadias) and an excess of development in the female sex (hypertrophy of clitoris and possible obliteration of vulvar orifice). If any difficulty be experienced in distinguishing the sex, the expert should examine the general bearing of the individual—the voice, gestures, face (beard?), the shape of the neck and members which, as a rule, are less muscular in the female than in the male, the arrangement of the pubic hair, circular in the female, triangular with the apex pointing to the umbilicus in the male. The essential, of course, is the detection of the testicles and the ovaries, but this, again, is often difficult or impossible on account of their non-migration. They may simulate a painful gland, and may even give rise to the diagnosis of a vaginal hernia. The absence of a uterus does not signify much. With hypospadiac males who disguise their sex because they prefer to utilise their cavity as a vagina, the male sex may be affirmed if the observer can trace (1) a characteristic depression, resembling a cutaneo-mucous raphé, at the base of the rudimentary penis, pulling it down; (2) the absence of a hymen or carunculæ myrtiformes; and (3) the absence of the labia minora. Hypospadials may have fortuitous discharges of a sanguinolent nature which may easily be mistaken for the menses.

THE POST-MORTEM IMBIBITION OF POISONS.

Dr. Abercromby has recently called attention to the *Medico-Legal Journal* for Sept., 1887, containing a letter from Professor

Reese, in which the question of the *post-mortem* imbibition of poisons is discussed, and the means considered by which such a condition may be distinguished from *ante-mortem* poisoning. The vital point in determining this matter, in Professor Reese's opinion, is to settle whether the poison can reach the brain and spinal cord by imbibition. The evidence is not as yet conclusive in regard to it, and he points out the necessity for care in making experiments on this point, for if any fluid were allowed to regurgitate from the pharynx into the posterior nares it might reach the brain readily through the ethmoid cells, but it has yet to be proved that it can reach it by imbibition from the stomach. Another point on which decisive information is wanting is whether poison can get into the urine by imbibition; it is well known that the walls of the bladder may be invaded by the poison in this manner, but it is not certain whether the poison has actually found its way into the urine under such circumstances. If it cannot, then we should have a reliable test of *ante-mortem* poisoning in the presence of poison in the urine, though the absence of poison in the urine would be no proof that the case was not one of poisoning during life. The discovery of poison on the surface of organs and not in the interior would, if clearly made out, be strongly presumptive of *post-mortem* imbibition.

POISONING BY COCAÏN.

Dr. W. Vignal records an interesting case occurring in the practice of Dr. J. Déjerine, of poisoning by subcutaneous injections of cocaïn. The patient was a dentist, twenty-six years of age. M. Déjerine found him in a semi-comatose state, with generalised muscular contraction of the arms and legs. The arms were slightly bent, the legs were stretched out. Patellar reflex action was not discernible, owing to contraction. The pulse was quick, but regular (120); the breathing hurried. The eyes were closed, the pupils dilated and insensible to light. There was complete unconsciousness. The following lesions were detected on the skin:—There was a pustular crusty eruption, consisting of pustules the size of a pea, covered with a blackish-grey, dry scab on the anterior external surface of the two arms, and on the anterior part of the legs and thighs. This eruption resembled the scabs of syphilitic rupia. The patient had suffered from blennorrhagia. On returning to consciousness the patient walked about with closed eyes, on account of the painful sensation caused by light on the eyeballs. He gave the following particulars concerning the

cause of the attack:—Six weeks previously he began to administer subcutaneous injections of cocaïn to himself. He began with doses of one centigramme. He increased the quantity gradually until he employed 50 centigrammes. The injection produced agreeable sensations and sexual desires, followed by ejaculation. The evening on which the attack above described took place he had injected one gramme of cocaïn at ten o'clock. He employed three syringes and a warm solution. At the third injection he fell down in an unconscious condition. On the following day Dr. Déjerine again examined the eruption, which consisted of limited gangrenous areas of the epidermis, resulting from the injections with cocaïn, which the patient had introduced into and not under the skin. At the spot where the injections were made white cadaverous spots were apparent; these were insensible to the touch. The patient stated that when M. Déjerine pinched him in different places during the state of coma he was aware of the fact, but that he felt no pain whatever. He was therefore sensible to the contact of an external object, but insensible to pain. The patient recovered. He has ceased to employ cocaïn. M. Déjerine considers that if the patient had not gradually accustomed himself to progressive doses of cocaïn, the dose of one gramme would have proved fatal.

PHYSICS OF THE MALE URETHRA.

Mr. Wagstaffe finds that when a medium-sized *bougie à boule* is introduced into the bladder, and then carefully withdrawn by a fine thread attached to its end, it undergoes a rotation, "at first to the patient's left, for a certain distance and to a certain degree, generally making the index stand directly opposite its original position, passing, that is to say, through 180°, or half a circle. This position was reached when the instrument had passed about four inches from its start, and then began a reversed rotation, usually, but not invariably, until the index stood at right angles to the start. An explanation of the phenomenon is, probably, to be found in the peculiar construction of the urethra." This "is rifled somewhat after the manner of a gun-barrel, but the spiral of the urethral tube, which runs from right to left in about the upper three-fourths of its length, usually becomes reversed near its distal extremity. The object of the spiral-grooving, in the case of the gun, is to secure for the projectile a rotatory motion, and a greater precision in the direction of aim; and we may fairly assume that similar advantages of a physiological nature are gained for the outflow of the urine and semen by the arrangement of the urethral column."—*St. Thomas's Hosp. Reports*, Volume XVI.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—Robert M'Donnell, M.D., F.R.S.
General Secretary—W. Thomson, M.D.

SECTION OF SURGERY.

President—A. H. Corley, M.D., President of the Royal College of Surgeons in Ireland.
Sectional Secretary—Mr. W. Thornley Stoker.

Friday, January 20, 1888.

The President in the Chair.

The Treatment of Advanced Conditions of Equino-Varus.

Mr. Swan read a paper on the treatment of advanced conditions of equino-varus. It can be positively asserted that all cases of congenital equino-varus are perfectly curable by the recognised and scientific treatment as ordinarily followed, if it be thoroughly carried out before the expiration of the first year of life, or before walking has commenced, subject to the accident of relapse, which may occur through carelessness or ignorance in not maintaining a correct position.

After three or four years have elapsed a modified result may be obtained, but here the treatment will be prolonged and difficult, and the degree of success will depend on the condition of each individual case, and the tendency to relapse will extend over a lengthened period.

When the person afflicted with equino-varus has reached the age of ten years, either with early treatment and subsequent relapse, or without treatment, features are presented which preclude the hope of success being attained by tenotomy and extension. The tarsal bones are thickened, and the typical distortion is increased. The large adventitious bursa is dense, and includes in its base the cuboid and the tarsal end of the

5th metatarsal bones, and may extend to a greater or lesser degree on the dorsum of the foot. The 5th metatarsal bone is not alone deflected inwards, but forms a distinct curve, which may easily be demonstrated on the living subject.

In such a case there can be no other means adopted with the hope of obtaining rectification of the deformity than ablation of a portion of the tarsal bones. In many cases a condition is present which would render such an operation useless and unjustifiable—namely, an atrophied condition of the anterior part of the foot. This is constantly seen in fully-grown persons, and sometimes at an earlier age.

The portion removed will consist of the anterior $\frac{3}{4}$ths of the cuboid bone, all the external cuneiform, except its posterior part, the proximal extremities of the 3rd, 4th, and 5th metatarsal bones, and the apex of the wedge will consist of a portion of the middle cuneiform.

The mobility of the foot will remain almost unimpaired. This can be explained by the fact that the joints, which principally allow of movement in the unmutilated foot, are not interfered with—namely, that between the os calcis and cuboid, astragalus and scaphoid; likewise that between the scaphoid and cuneiform bones—an alteration, in fact, occurs only of the joints between the three outer metatarsal and the external cuneiform and cuboid, in which the normal movement is limited.

As the metatarsal bones have their epiphyses at the distal end, it is probable the development of the foot would not be interfered with. Thirty-four cases had been selected by Mr. Swan as suitable for operation since 1876. Many of those have been shown at the Sectional meetings, and are now illustrated by casts of the limbs before and after operation.

Mr. W. Thornley Stoker asked what means Mr. Swan approved most to retain the bones in apposition after section. His own experience of plaster for that purpose had been confined chiefly to Ogston's operation, but he objected to it on account of the difficulty of preserving the antiseptic condition of the wound, and he preferred a freer method of dressing after section. He had found that ivory pegs answered the purpose without giving rise to irritation. He also asked whether Mr. Swan had found it necessary, as an after-step, to make divisions of the plantar fascia.

Dr. Gunn considered that plaster-of-Paris, applied continuously and trephined—*i.e.*, holes bored into it—would be an improvement.

Mr. Swan, replying, agreed with Mr. Stoker as to the disadvantages of plaster, but he found it impossible to get appliances properly made to keep the foot sufficiently immobile. In Ogston's operation he did not use pegs, the consistency of the bones in the very young being sufficient to maintain apposition. The plantar fascia always required division. He also concurred with Dr. Gunn that there were many cases in which the anterior part of the foot was so small from disuse and atrophy as to render an operation undesirable.

The Surgery of the Thyroid Gland.

Mr. Foy read a paper on the surgery of the thyroid gland. [It will be found in the Number of this Journal for March, 1888, page 239.]

The President said that Mr. Patrick Heron Watson had advocated the operation for the complete removal of the gland, while at the same time indicating that the surgeon must be prepared to see the patient die on the table—a fatality which occurred at least once in that distinguished surgeon's practice; and he dwelt strongly on the necessity of leaving the capsule untorn, especially the capsule surrounding the vessels.

Mr. Story inquired what the indications were for operating at all on tumours in the thyroid gland. Was it considered that the operation might be undertaken for cosmetic reasons or only for the sake of respiration or deglutition?

Mr. Kendal Franks, having operated three times, did not think the size of a tumour in the neck was at all a guide to operative procedure. A large, unsightly goitre was not by any means the usual one for removal. Hence the question of cosmetic reasons might be dismissed. But small tumours indicating a tendency to press backwards and sometimes down underneath the top of the sternum, causing great distress and dyspnœa, endangered life. In his own three cases he dealt with cysts, and not with hypertrophied thyroids themselves. He once met a large thyroid which protruded a great deal, causing dyspnœal symptoms. Having been advised to try a seton, he passed a drainage tube right through from side to side of the thyroid, with the result that he would never adopt such a course again. Multiple cysts and proliferating masses protruded through the two openings. In none of his cases had he enucleated the whole of the thyroid gland. When part of the gland was left there was no fear of myxœdema. But hæmorrhage was the great bugbear, to avoid which Billroth advised against opening the capsule, and still more, though contrary to Billroth's rapid method, success was achieved by taking plenty of time at the operation.

Mr. W. Thornley Stoker asked whether Mr. Foy's case was one of tumour in the substance of the gland, or cystic disease of the gland itself, as he believed there was a great distinction between these cases and those of ordinary goitre, in respect of the rapidity with which to elect operative procedure. He had himself operated in several cases of goitre, both by removal and by division of the isthmus, and in his experience the operator must be prepared for terrible hæmorrhage. As regards the indications for operation, there were, no doubt, a class of cases of simple hypertrophy of the thyroid gland in which no conscientious surgeon would operate without first resorting to certain remedial measures; and when such means failed, or when the case was one of tumour of the thyroid, or cystic disease, an operation should be approached only when the tumour had reached such a

condition as to threaten life by interfering with respiration or deglutition. He condemned, with Mr. Franks, the practice of passing a seton through the gland, not knowing what structures it might penetrate; it might set up phlebitis. The *rationale* of the operation of the division of the isthmus was that it limited the blood-supply of the gland. He found it gave relief for the time and set the trachea free. About a year ago he removed the right lobe of the thyroid as big as a cocoa-nut, leaving the left untouched. The latter had since undergone normal atrophy, and the patient was now in perfect health without any visible deformity. The radical operation Kocher, of Berne, had proved by statistics to be an absolutely fatal proceeding, death from myxœdema being the inevitable result, while the removal of half the gland did no harm once the patient recovered the effect of the operation. As regarded the opening of the capsule he had no decided opinion, being unable in his operations to find out where or what it was; for when he cut down on the diseased structure he came on the gland covered by enormous veins, some as big as his thumb, and whether these were inside or outside the capsule he had not been able to determine.

The PRESIDENT would be glad to avert danger either by internal or external remedies rather than by an operation. Thirteen years ago he had a case of acute goitre, and at the suggestion of Dr. Purser he had given five or ten grains of quinine three times a day, and in a week or ten days the growth stopped. Happening to be with Sir William MacCormac in St. Thomas's Hospital he saw a patient with a tumour on the front of the neck that grew rapidly, and he mentioned the quinine cure. Sir William MacCormac tried it, and in fourteen days the growth ceased and the patient recovered. Thus there were a variety of growths some of which might be successfully attacked without having recourse to operation.

MR. FOY, in reply, stated that the operation was justified when the tumour was growing quickly, when dyspnœa and dysphagia were marked, or when any evidence of malignancy was present, and also when the most approved internal and external medication had not given good results. He was not in favour of opening the capsule, but when an adventitious capsule was formed he believed he had no option. In the swampy districts of the Carolinas a malarial type of goitre was prevalent which was amenable to treatment by quinine; but the occurrence of such cases in this country must be very rare. Goitre occasionally grew so rapidly as to terminate life by suffocation. Sir Risdon Bennett, in the Lumleian Lectures for 1872, instanced such a case. Bleeding would probably continue to be the principal danger; but when Desanet, Roux, Gooch, and others, successfully extirpated thyroid tumours and ablated the gland prior to the days of chloroform, modern surgeons should be able to do so when anæsthetics placed the patient in so much a better condition for

operation. Setons, tapping, and caustics, were not free from danger, and in many cases did not give favourable results. As for Sir Morell Mackenzie's method of injecting perchloride of iron, he mentioned it only as a treatment most unsuitable and to be avoided. A photograph [exhibited] of the patient was taken twelve months after the operation.

The section adjourned.

SECTION OF MEDICINE.

President—James Little, M.D.; President of the King and Queen's College of Physicians.

Sectional Secretary—A. N. Montgomery, M.K.Q.C.P.

Friday, March 9, 1888.

The President in the Chair.

Case of Pneumo-Thorax exhibited.

Dr. Walter G. Smith exhibited a patient suffering from pneumothorax.

The Ætiology and Classification of the Anæmia of Puberty.

Dr. E. MacDowel Cosgrave said—Although severe anæmia accompanying puberty is so common, its ætiology is by no means clear. Various theories have been put forth to account for it. It is classed as a functional disorder of the organs of generation, as an hereditary fault of the blood and blood-vessels, as a neurosis, as the result of constipation, &c. Most of the predisposing and exciting causes to which it is ascribed are merely coincident with the time of life at which it appears. The most important exciting causes are those which lessen metabolism, such as want of air and exercise. Constipation cannot account for it; it occurs in both sexes at all ages, and is accompanied by shortness of breath, palpitation, and other symptoms of anæmia only at puberty and the menopause. Iron without purgatives will often cure.

The disease may be divided into three classes—

I. Fat anæmia.

II. Anæmia of overgrowth.

III. Anæmia of malnutrition.

In the fatty form there is an hereditary tendency, and it is especially common amongst the children of women who were married early in life.

The habit is for men to select wives younger than themselves. The result of this sexual selection is to cause premature development of the

female organs of generation. This causes a sudden strain on the tissues derived from the mesoderm, which, unless there is good health, cannot be met. In the one case, from deficient oxidation, &c., fat is deposited in the tissues; in another the general growth of the tissues prevents the proper sexual development; in the third case the nutrition is so bad that no extra strain can be borne.

In the first class, aloes, iron, meat, and moderate exercise are indicated. In the second class aloes should be avoided; fresh air, milk, and the syrups of the iodide of iron and of the phosphates are of use. In the third class the indications are—country air, nourishment, cod-liver oil, and the sulphates of iron, quinine, and magnesium in combination with hydrobromic acid.

Mr. Cox said the disease arose chiefly among country girls who became servants in town houses, and also among shop girls who had long hours at business, got their meals hurriedly and irregularly, and slept in crowded apartments. His treatment was, first of all, absolute rest in bed for a fortnight, then purgation by sulphate of magnesium, then iron. As a general rule, iron should not be given when the tongue was coated. He combined it with tincture of digitalis or of nux vomica, and sometimes used a combination containing ferrum redactum in 2-gr. doses, with $\frac{1}{16}$-gr. of the arseniate of iron. Excluding tuberculosis and scrofula, simple anæmia was a curable affection.

Dr. C. J. Nixon said the older writers attempted to draw a distinction betweeu anæmia and chlorosis. He could not understand any distinction between the anæmia of puberty and chlorosis. Why not as well speak of the anæmia of dentition or of diarrhœa? The object was to determine the origin of anæmia—whether it was essential or symptomatic. The essential forms were of three classes—First, the constitutional, which had its origin from birth, represented in the pale, anæmic people going through life, apparently bloodless, sometimes able to discharge their functions without evidence of disease, sometimes the condition of the blood giving rise to distressing symptoms. That was a form of which they knew nothing, whether as regards its being due to a deficiency in the manufacture of the elements of blood, or to an increased amount of the destruction of those elements. The second class was that described by Dr. Cosgrave—namely, the anæmia of puberty; an anæmia ordinarily spoken of as chlorosis, a term of which he approved. The third class was the form known under the name of pernicious anæmia, the certainty of the existence of which they only arrived at because the patient dies. Dr. Cosgrave had given as a classification "fatty anæmia." But in grave forms of anæmia there was an excessive deposition of fat, a diminution in the red blood-cells and in the hæmoglobin of those cells, resulting from a diminution of oxygen, and an increased waste of the albuminoid tissues. Therefore, there was no reason for mapping off a

special form under the name of fatty anæmia. He did not think that Mitchell-Bruce deserved the credit of pointing out the defective conditions in the heart and vascular system in anæmia, but that it was due to Virchow. Again, Dr. Finny had the merit of pointing out in a case of pernicious anæmia deposits of iron in the different organs—in the spleen and kidneys and the peripheral portions of the lobules of the liver. When the pathological principles as to the basis came to be investigated they recognised all forms of anæmia as standing on the same level with regard to the condition of the blood-cells, in simple anæmia as in cases of chlorosis, or in the most profound forms of pernicious anæmia. Chlorosis applied not only to the female when special calls were made on the vascular system in puberty, but to the male also. The reason the female was more subject to the disease was because the red blood-cells were normally fewer in number; and, certainly, from the condition of the generative system—ovulation and menstruation—there was more disturbance in the blood-forming process in the female than in the male.

Dr. Wright concurred with Dr. Nixon that the disease would be best called chlorosis. His experience as a dispensary medical officer, who received a great many cases returned from the hospitals apparently cured, was, that there was generally a relapse after a month or more. The only way to cure the patient was to recommend her, the moment she felt the health fail, to put herself under treatment and commence taking iron. Although Sir Andrew Clark had recently claimed the credit of being the first to indicate fæcal accumulations as a cause of the disease, he well remembered that the late Mr. Richardson taught his class years ago that he could cure as many cases by using aloes as by using iron.

Mr. Foy mentioned a case of five daughters and two sons, the offspring of an early marriage, of whom the girls became anæmic, the boys escaped.

Dr. John Wm. Moore said that season exercised an influence on the occurrence of anæmia or chlorosis in young adult life; for instance, there was a greater prevalence of the disease in winter than in summer.

The President thought it would be a very dangerous thing to make a diagnosis of anæmia in any case where there was loss of weight accompanying it. Where he saw a girl who became breathless and had palpitation on exertion, and had got white, if she did not increase in weight, he would fear he had to deal with tuberculosis, and not with anæmia at all. The want of good food and good air would not account for girls becoming anæmic. He had had under treatment a young lady who lived in a good house in the County Meath, and hunted three days a week, and yet became so anæmic she could not walk upstairs without suffering from breathlessness and palpitation, though she was not engaged in what was sometimes the cause of anæmia—namely, making her waist. He knew in the same county another family, with three young ladies all profoundly anæmic, though they had good food and

horses to ride. One of the ladies was aged thirty-five, and she had been suffering as long as he knew her. With regard to fæcal retention as a cause, he was glad to concur with Dr. Wright in attesting the late Mr. Richardson's treatment, and Dr. Hudson had also taught, twenty years ago, that anæmia could not be cured as long as the bowels were allowed to be confined. Dr. Nixon was right in inveighing against the division between chlorosis and the anæmia of puberty. There were cases where anæmia had been set going by shock; for instance, that of a young lady who accidentally killed her father by giving him a poisonous liniment. Then there were affairs of the heart and other exciting causes, suggesting that anæmia was due to some influence on the nervous system.

Dr. Cosgrave, replying, said a marked improvement in six or eight weeks was the general result. When the treatment was carried out regularly, cure was the usual sequence. No doubt, in all cases there might be a fatty change, but not a fatty deposit under the skin, and it was to this condition he applied the name fatty anæmia. As regards Dr. Nixon's preference for the term "chlorosis," he thought that that term described a condition much more applicable to sea sickness; and if all forms of anæmia were to be classed together, it was better use the word "anæmia," and then apply another term for the different subdivisions.

Gastric Epilepsy.

Dr. A. W. Foot made a communication upon Gastric Epilepsy. [It will be found at page 384.]

Dr. Finny mentioned the case of a young student in Trinity College, Dublin, who, crossing the Channel, had a supper of beefsteak about three o'clock in the morning on board the steamer. After breakfast he became the victim of a very severe attack of epilepsy. The cause proved to be the undigested beefsteak, and there was no return of the disease. He had experience of another case of a young man who had, when a child, suffered from scarlet fever. That youth, whenever the large bowel became loaded with animal food, became liable to epileptic seizures. Hence caution had to be adopted as to the kind of food he used, and he was placed on a regimen of milk and farinaceous food. Animal food taken for four or five days consecutively would produce epilepsy. Hence, in Dr. Foot's case, "gastric epilepsy" was a very good name, although, of course, it was epilepsy of reflex origin, arising from the stomach, that was meant.

Dr. C. J. Nixon said Dr. Foot's case was one of extreme interest in view of the important fact that an epileptic of five years had got completely well. When speaking of a reflex cause—such as a mass of food in the bowels—producing epilepsy, that was scarcely going far enough,

having regard to the number of people who partook of indigestible food, and stimulants of all kinds with impunity. Therefore, it was not sufficient to direct attention to the peripheral irritation alone. A healthy person would not get an attack from a mass of undigested food in the bowels. There must be a peculiar condition of the cortex of the brain which, from irritation, set up the epileptic condition; and the special danger was that once it was developed it was apt to continue. A first seizure meant a probability of a second, and a second meant a greater probability of a third, and so on. In alcoholic epilepsy when the patient returned to the stimulants he was liable to a second seizure, and especially so if he continued to drink. If then the source of peripheral irritation was removed, and the epileptic condition passed away, there were grounds for retaining the name "reflex epilepsy."

Mr. Cox mentioned the case of a school girl who, having been treated too generously by her friends, got an epileptic seizure which terminated in vomiting; and also the case of a youth in the period of adolescence in whom the same phenomena, consequent on eating food hard to digest, occurred. Epileptiform seizures from alcohol had almost invariably a renal origin.

The President said Dr. Nixon had drawn attention to the most important practical point in Dr. Foot's paper, showing that though the physician might not be able by any therapeutic means to modify the tendency which existed in some portion of the brain to the epileptic discharge, still the exciting cause of the discharge could be removed and thereby the patient saved from a recurrence of the attack. Thus there were two factors at work. Besides the irritation there was the mobile excitable condition of some portion of the brain which made it liable to discharge itself on slight provocation.

Some twenty years ago he saw a boy, aged eight or nine, whose case left a great impression on his mind. The boy had had a succession of epileptic seizures. His father and mother were first cousins, and he had five uncles and aunts confirmed epileptics. Still it occurred to him that the boy might have worms. Means were taken that dislodged a vast quantity of round worms. From that time to the present the young man, who was now 30 years of age, had never had a recurrence of the epileptic seizure. If the worms had been allowed to remain sometime longer until the epileptic habit had been established, he would have been, like his uncles and aunts, a confirmed epileptic.

Dr. Foot, in reply, said the duration of his case was even more than five years. The first attack was on August 12th, 1876, and in 1880 the attacks ceased and the patient was sufficiently well to discharge his duties in a public office. He remembered several cases in which there were but few attacks and complete recovery ensued. For instance, a schoolmate who was allowed the privilege of sitting up late preparing for first

place at entrance to College was thrown back by a violent attack, and yet he never had an attack since, and he was at present in command of a regiment.

SECTION OF STATE MEDICINE.

President—Charles Frederick Moore, M.D.

Sectional Secretary—E. MacDowel Cosgrave, M.D.

Friday, April 6, 1888.

The President in the Chair.

The Distribution of Enteric Fever in the City of Dublin.

Dr. Grimshaw, Registrar-General for Ireland, in conjunction with Sir Charles Cameron, Medical Officer of Health for the City of Dublin, brought before the Section a paper on the distribution of enteric fever in the city of Dublin.

The authors stated that their attention had been especially directed to the subject in connection with an inquiry which they had recently conducted into the prevalence of enteric fever in the Royal Barracks, and part of the information utilised for their paper has been compiled with the view of throwing light on the Barracks inquiry.

The authors showed that while typhus fever had steadily diminished in Dublin for many years, and relapsing fever had been almost absent, enteric fever had remained stationary as to prevalence, not showing any marked tendency to increase or to diminish.

The death-rates from typhus and enteric fever, and from zymotic diseases generally, had been at the following rates per 1,000 of the population of Dublin during the past eight years :—

	1881	1882	1883	1884	1885	1886	1887
Typhus - - -	0·70	0·30	0·52	0·30	0·18	0·11	0·07
Enteric - - -	0·35	0·40	0·37	0·42	0·42	0·38	0·38
Principal Zymotics - -	2·80	0·81	3·52	3·57	3·47	2·22	5·12

It was also shown that enteric fever was not evenly distributed among the populations of the city and various townships of Dublin—the average death-rate per 10,000 for the whole district being 3·7, which varied from 1·8 in Finglas and Glasnevin district to 3·9 in the city itself.

The authors pointed out that while the death-rate from enteric fever in England and Wales was 0·25 per 10,000 of the population, and London

only 0·23—or nearly the same, in Ireland the rate was only 0·17 per 10,000, yet in the Dublin district it was 0·47—or nearly three times the amount. Thus, Dublin, situated in a country with a low enteric fever death-rate, has a higher rate, relatively, than London, situated in a country with higher rate.

From all these circumstances it is clear that enteric fever has found in Dublin favourable conditions for its spread. The question is, what are these conditions? The greater portion of the Dublin district is supplied by the excellent Vartry water; but it is a remarkable fact that in the only division outside the city where there was not a Vartry water supply, namely, Rathmines, during the past eight years, the enteric fever death-rate was 3·7—or equal to the average for the whole district—and exceeded all the divisions of the district, except the city. Although Rathmines and the adjacent district of Donnybrook are provided with an excellent system of main drainage, such as does not exist in any other portion of the Dublin district, Blackrock and Kingstown, inhabited by the same classes, and supplied with Vartry water, have extemely low enteric fever death-rates.

Besides these peculiarities with regard to drainage and water supply, there are varieties in the geological nature of the Dublin district which the authors maintain have an important influence on the prevalence of enteric fever. Having referred to Pettenkofer's observations on the relations between the ground water of pervious soil and the distribution of enteric fever and cholera, the authors described the structure of the strata of the Dublin district, and showed that many portions of it are situated on pervious, others on impervious strata, and that enteric fever prevailed most (except in the case of Rathmines, which had a bad water supply) over the pervious strata.

This was shown to be markedly the case within the city. A map of the city had been provided, upon which were marked all the cases of enteric fever for five years, and a second map which showed all the deaths for the same period.

The result showed that the rate of prevalence of enteric fever among the population situated on the pervious stratum was 6·82 per 10,000, while on the impervious stratum it was only 4·6 per 10,000. In the case of the deaths it was found that the enteric fever death-rate on the pervious stratum was at the rate of 1 in 365 of the inhabitants, while on the impervious stratum it was only 1 in 531.

This pervious stratum consists of a sand and gravel bed formed by an old raised sea-beach, which occupies the centre of the city along both sides of the River Liffey, into which is discharged all the city sewage. This gravel bed lies on clay and rock, so that it retains all the fluid filth cast upon it or soaked into its pores from the river, and may be considered to be like a basin of dirty water placed in the middle of the city, over which houses are built inhabited by about

80,000 people. The authors believed this to be the great ground for the propagation of enteric fever in Dublin, and pointed out that the only remedies are those directed towards the prevention of the saturation of the gravel bed with sewage, and the complete isolation of the houses from the foul air contained therein. This must be done by main drainage, the abolition of privies and cess pits, and the concreting of the basements of all houses situated on the gravel.

An inquiry into the relation between cases of enteric fever and the sanitary accommodation of the houses where they occurred showed that there was a close association between badly-constituted or badly-placed water-closets and the spread of the disease.

Dr. John William Moore believed the gravel bed extended from the banks of the Liffey along the course of its tributary rivulets from north and south. One of these rivulets, which passed under Digges-street and Bishop-street, was a notorious haunt of cholera. An outbreak of typhoid had occurred in Bishop-street, within a few yards of the old rivulet. The group of red circles in the map prepared by the authors of the paper, denoting the site of disease in Trinity College, marked one of the few houses provided there with water-closets, and distant only a few yards from the latrines popularly called "The Muses." Another interesting point was the singular immunity from disease of a district near Wood-quay—a nidus of typhoid. This safe district was in close proximity to Christ Church Cathedral, which stands on an old bog. On examination he had found that the subsoil of the adjoining Synod Hall would burn like turf from the Bog of Allen. Stokes had remarked that one reason intermittent fever was so rare in Ireland was probably owing to the antiseptic action of the peat. Intermittent fever, until recently, prevailed in Dublin only where there was a gravel bed. He saw a *bonâ fide* case of ague himself in a house on Sir John Rogerson's-quay.

The President said he had been informed by an architect that the extensive premises of Messrs. Pim Brothers, Limited, South Great George's-street, were built on a bog, and he noticed, in conformity with Dr. John William Moore's view, that these were not included in the typhoid area on the map.

The President of the College of Physicians (Dr. James Little) suggested that the concreting of the foundation or basement story of houses to prevent the exhalation of gases being a slow process, the tendency to the absorption of gases from the under story might be prevented by keeping the windows open.

Sir Charles Cameron said the Corporation of Dublin had, at his suggestion, concreted the foundation of all the artisans' dwellings recently built in Barrack-street, so that no foul gases could pass into the interior of the house from the soil.

Dr. Grimshaw, in reply, said the prevalence of enteric fever was

not so well-marked as that of cholera along the old river courses. As regards Trinity College, there had been no cases but the three specified for twenty years. Looking for another community of young men to compare with the soldiers in the Royal Barracks, Trinity College was naturally suggested as situated also upon a gravel bed, and then, on inquiry, they ascertained the fact that there had been only three cases of enteric fever in College within the last twenty years. No doubt, twenty years ago there were several cases which arose from drinking the dirty water of the wells outside the dining-hall. There was no Vartry water then in College, the supply of water being obtained chiefly from Charley O'Malley's pump. The sanitary arrangements of the new house in College where the water-closets were could hardly be worse.

Sir Charles Cameron did not concur with Dr. John William Moore as to the likelihood of there being gravel soil along the course of the rivulets; he thought it was clay, though no doubt there was some gravel, the detritus of the argillaceous limestone, but not to any considerable extent.

Hypnotism.

Mr. G. M. Foy, F.R.C.S., read a paper on Hypnotism.

Mr. Foy's paper traced the history of Hypnotism from the days of the notorious Irishman, Valentine Greatorex, who was specially commissioned by Charles II. as a "Stroker," and gave an account of the wonderful boy "Foreteller," Duncan Campbell, the Scotch lad, who had De Foe for a biographer, and was the subject of some of Dick Steele's papers in the *Spectator*, up to the advent of Mesmer, showing how ripe for such pretentious success were the times, by copious extracts from Cardinal Wolsey's correspondence, and the work of Sanders on Chiromancy, Metascopie, and such like studies. Incidental mention was made of the attempt of Paracelsus to harmonise medical science and the teachings of predictive astrology, and a brief account was given of the rise of the sect of "Convulsionères" in France, all of which pointed to the ripeness of the times for Mesmer's pretentions. The history of Mesmer's meeting with Father Heel and the successful career of these swindlers, together with the finding of the celebrated Committee of Investigation, being told, Mr. James Braid's examination of the claims of Mesmerism was detailed, and the fact that many surgical operations of a severe nature were successfully performed by Esdaill, Cloquet, and others, was mentioned, together with the views held on the subject by Heidenhain, Tuke, Carpenter, and other writers.

The increased attention latterly given to the subject induced the author to bring the subject forward.

Within a recent period operations have been performed in Parisian hospitals on hypnotised subjects, and to facilitate delivery an hysterical woman has been hypnotised.

In other countries the profession are interested in the subject. Thus in the *Recueil D'Ophtalmologie* for August, 1887, the utility of hypnotism as an anæsthetic agent is considered, and the *Bulletin de l'Académie de Médecine*, August, 1887, contains a full report of M. Luy's paper on the subject. Dr. Gemma contributed a paper on Hypnotism to the *Gazzetta degli Ospitali*, No. 93, a Milan journal. On the 7th of March, 1888, M. Luy's further experiments at the Academy of Medicine, Paris, is reported in *La France Médicale*. The *Riforma Medica* in last January had a series of articles on the subject by Dr. Rummo. Even from Mexico we have contributions on hypnotism as a curative agent, *La Medicina Cientifica* having recently published some contributions on the subject.

The practical question—"What therapeutic use can Medicine make of Hypnotism?" awaits answer, and the author does not much favour the use of the remedy, as it is attended with many dangers, and is not always reliable in its action—sometimes producing hyperæsthesia. Then occasionally the hallucinations of the hypnotic state continue; also there is the risk that during the hypnotic condition any hysterical bystander would become similarly affected. Besides this, medicine cannot encourage this exaltation of subjective impressions, which not only might make the patient the unconscious victim of designing persons, but, especially in weak-minded persons, bring them to the border-land of insanity.

Unquestionably, hypnotism has occasionally been of value as a therapeutic agent. Hypnotic sleep has given rest when ordinary remedies have failed, and in the case of a very hysterical woman it not only diminished the pains of labour, but also protected the lives of the mother and child, which were endangered by the wildness of the patient's acts.

In cases where heart or lung troubles preclude the ordinary anæsthetics, hypnotism might fairly claim a trial; but such cases are few, and a remedy which threatens reason, is liable to gross abuse, and is uncertain in its action, stands self-condemned, and cannot, in our present insufficiency of knowledge of psychology, look for support from scientific medicine.

Glengarriff as a Winter Health-Resort.

Mr. Edgar Flinn read a paper on the above subject. [It will be found at page 401.]

The President of the College of Physicians (Dr. James Little) said they were all too prone to think that far away fields were green. From personal observation, having sojourned in Glengarriff on two occasions, he expressed his entire concurrence with Mr. Flinn's opinion as expressed in his paper. He stayed at Eccles Hotel, in the Valley, as better than the other hotel, which, though an exceedingly good one, was in a lofty situation. Dr. Hudson was in the habit of sending his bronchitic and rheumatic sufferers there during the spring months—March, April, and the early part of May—as the season when Glengarriff was

particularly useful. Glengarriff compared very favourably, as far as climate and hotel accommodation were concerned, with the English sea-side health-resorts, including Torquay, Bournemouth and Ventnor. But, of course, people's minds had to be considered to a certain extent as well as their bodies, and though there were some who would be perfectly satisfied with picturesque scenery and pleasant walks, others felt their spirits better when in the region of gas-lamps and shop-fronts. To such people Torquay and Ventnor were more attractive than Glengarriff, as there was a great deal more done in those places in promoting amusement. From the statements of patients as regards the weather, he considered the weather at Glengarriff would compare favourably with that at any of those English watering places. Indeed he thought, making a contrast with Continental resorts also, that Glengarriff lacked the coldness, dampness, gloom, and rain which prevailed during a great part of the year at Pau.

Sir Charles Cameron considered the worst feature of Glengarriff from a health point of view was the excessive rain-fall, between 40 and 50 inches in the year. The value of the paper would be enhanced by a chart showing, by means of a curve or otherwise, the distribution of rain throughout the year, in order to determine the time of the year when the rainfall was smallest. The discomfort of Buxton was the frequent rainfall; but it was nothing to that which prevailed at Glengarriff, if the return given was authentic. It would be of great value that the meteorological statistics should be accurately known, giving the average number of rainy days, the mean temperature and the extremes each month. Mr. Flinn's paper recalled a communication made by Dr. Blennerhassett, as to the immunity of the natives of Dingle, County Kerry, from phthisis. As regards grapes growing in the open air, he knew it was possible to grow grapes in the Arctic regions; but even in the Channel Islands the grapes produced were fit only for vinegar, and therefore he asked whether it was a fact that grapes which could be eaten grew in the open air at Glengarriff.

Dr. John William Moore regretted that there was no meteorological station at Glengarriff, and until there was such a station the place would never be known outside Ireland. It was by the establishment of climatological stations that certain places in the South of England came to be known and frequented. The nearest stations to Glengarriff were those at Killarney and Valencia. It appeared that the bulk of the rainfall descended in the late summer, throughout the autumn, and in the early winter. Therefore, at the season when Glengarriff was most needed as a health-resort—namely, spring—the climate must be simply delightful. There was a moderate rainfall, the sky was clear, and the wind, though easterly, was deprived of all its harshness by passing over a considerable extent of water surface. He

had no doubt that during the past two months the climate of Glengarriff had been perfection. The value of a thermometer exposed in front of the hotel went for very little. Careful observations should be made on the wet bulb thermometer as well as on the dry. The desirability of establishing a station at Glengarriff should be brought under the notice of the Meteorological Council of the Royal Society, and somebody in the neighbourhood ought to be induced to take the observations. Indeed, what was called an observatory of the second order could be fitted up at a cost of £10, and some member of Mr. Eccles' family might soon be taught to read the instruments with sufficient accuracy.

Dr. Cosgrave emphasised the fact of the great mildness of the climate of Glengarriff in spring. A patient of his, who had been for the last four weeks at Glengarriff, had written to him, stating he had been out from morning till night during the whole period without feeling the slightest inconvenience, though when he left Dublin the apex of one lung was affected, and he had great difficulty in breathing. In addition to the advantage of having such a desirable climate within easy reach of Dublin, there was also the advantage that Glengarriff was an exceedingly cheap place—the hotels charging only from £2 to £2 10s. per week for bed and board. He concurred in the importance of establishing a meteorological station there.

The President remarked that it was also an important fact in favour of Glengarriff that no such violent and sudden changes of weather from heat to cold occurred there as in Southern Europe along the Mediterranean shore.

Mr. R. Montgomery said Dr. Hudson had been in the habit of advising his patients to go to Glengarriff, but a great drawback was the difficulty of access to it and the want of amusements to supplement the picturesque scenery and balmy air. In the English health-resorts there were bands and other entertainments which drew the people from thinking of themselves, or regarding the place as a recovery hospital.

Mr. Geo. Clarke who had been there two years, said that the rain dried up with remarkable rapidity.

Mr. J. J. Murphy said one patient had complained of the rain and another of the fogs.

Mr. Flinn, in reply, said he had called the attention of the proprietors of the two hotels at Glengarriff to the necessity of having a regular system of meteorological observations, and they said they had applied for it five or six years ago, but their request was refused. The rainfall at Torquay was 40 inches in the year, which came very near to that at Glengarriff. Wherever there was beautiful scenery, mountainous especially, there was sure to be an excessive rainfall. The climate was so mild in February at Glengarriff that he sat in the evenings outside Eccles' Hotel, where seven or eight of the eighteen visitors happened to be English invalids ordered there by English medical men.

CYCLOPIA.

An Abstract from the Danish of Prof. Hannover, M.D., of Copenhagen.[a]

By J. F. Knott, M.B.

Cyclopia is a form of monstrosity not justly entitled to the name by which it is known. Its denomination, in fact, implies the existence of a single eye, but there are cases of cyclopia on record in which two eye-balls were completely formed, each resting on its own orbit; while, apart from this consideration, the monstrosity in question does not affect the eye alone, but at the same time engages the ethmoidal and a portion of the sphenoidal segments of the primordial cartilage of the skull, as well as the bones formed in these cartilaginous portions; extending also to the brain itself, where it includes alterations of the optic and the olfactory tracts, and engaging at the same time the upper part of the pharynx. Of these four malformations, the first and second (those of the eye and of the primordial cartilage) are due to an arrest of formation; but the two latter should be regarded as the result of an arrest of development. In this memoir cyclopia is considered only in its relations to the human fœtus.

As the formation of the eye is double from the beginning, and as there are cases of cyclopia with both eyes completely formed, its occurrence cannot be due to an arrest of development, but must arise from a want of the formative material in those parts of the eyes which are naturally placed in juxtaposition. The primordial cartilage presents a corresponding deficiency. In the sphenoidal portion we may observe the absence of the anterior wall and of the rostrum of the sphenoid, while the plane between the two lesser wings is also wanting. In the ethmoidal part the lamina perpendicularis is wanting, also the lamina papyracea, and the various turbinated bones, including even the inferior, of which we have but very small rudiments. The nasal part of the primordial cartilage exists only when there is a tube, while the cribriform plate is completely absent or very rudimentary. Accordingly, we see that it is the præchordal part of the primordial cartilage—the portion not traversed by the notochord—which is absent or incomplete, from the absence, originally, of the materials necessary to its formation.

As in the central portion of the præchordal segment of the primordial cartilage, there is likewise a deficiency of formation material in that part which is comprised between the two orbital regions, and which is made up of bones formed in membrane without any preceding formation of

[a] Den menneskelige Hjerneskals Bygning ved Cyclopia og Misdannelsens Forhold til Hjerneskallens Primordialbrusk. Af Adolph Hannover, M.D., Professor.

cartilage. The defects presented by these bones may be regarded as secondary, or as produced by the original deficiencies in the primordial cartilage, which should offer a *point d'appui*, or serve as mould for those bones which are formed between membranes, as has been already shown by the author in his memoir "On the Primordial Cartilage and its Ossification in the Human Skull before Birth."[a] Accordingly, we find that the inter-orbital septum with the two laminæ papyraceæ are, as a rule, wholly wanting, especially at the posterior part, even when the two eyes are well formed, and placed each in its own orbit; while the lachrymal bones may be present, but as rudimentary or displaced from their normal position. The other bones which contribute to the formation of the orbits present similar defects towards the middle line of the body both above (os frontis) and below (os maxillæ).

It is not difficult to show that the brain in cyclopic fœtuses shows indications of an arrest of development in no way dependent on any fusion of the eyes. The cavities of the great brain are represented originally but by the third ventricle, and it is this condition which is preserved in the brain of those fœtuses when mature; for we find a deficiency, more or less considerable, of the usual separation between the lateral ventricles of the two sides. The great median fissure and the falx cerebri may be completely wanting—the anterior part of the fore-brain forming but a single lobe, of which the convolutions may be completely effaced. The olfactory bulbs, corpus callosum, and fornix are absent; the corpora striata may also be.

The arrest of development in the pharynx is recognised by the fact that the pharynx in the cyclopic fœtus always ends above in the form of a dome, terminating in a *cul-de-sac*, in the region below the future sella turcica and the pituitary gland which the latter contains. The dome-like shape of the upper end is due to the circumstance that the intestinal tube is originally closed above; it is only at a later date that it enters into communication with the nasal fossæ and with the mouth. But in case of the fœtuses with which we are now concerned, the extremity of the tubal canal is closed, and, in the absence of any nasal conduit, there is, of course, no such thing as a communication between the latter and the mouth or pharynx; the orifices of the nasal fossæ are wanting both anteriorly and posteriorly.

There are two formations which should be placed in connexion with the dome-shaped extremity of the pharynx and the absence of the orifices of the nasal fossæ. One of these is an osseous plate which, in the fœtuses we are now examining, projects vertically or a little obliquely from the horizontal part of the palate bone, and ends on the under surface of the body of the sphenoid, and closes, apparently, the posterior orifice of the

[a] See my abstract of this memoir, *Dublin Journal of Medical Science*, Vol. LXXV., page 223. March, 1883.

nasal fossæ, which latter, however, do not exist. The other formation represents a vestige of an epoch when a communication existed between the brain and the buccal cavity. Rathke was the first to show that from the latter cavity a prolongation is sent off, passing under the lower part of the infundibulum, and turning a little upwards posteriorly, forming in the snake, the lizard, and the fowl a short cæcal canal, with a relatively large orifice. As a distinct vestige of this canal—to which Professor Hannover gives the name of the canal of Rathke—this author has found, at the bottom of the sella turcica in cyclopic fœtuses, a round cæcal opening having the appearance of a large nutritive canal. This opening is situated in the middle of the bottom of the sella turcica, or, as is oftenest the case, immediately in front of the lamina quadrilateralis, and its existence has been found nearly constant among the cyclopic fœtuses which he has examined. In one specimen, represented by a plate in the original communication, two fœtal heads were found united at the sellæ turcicæ, there forming a thick, flat, rectangular osseous plate, with an opening through which daylight could be seen, and transmitting a needle of moderate size. In 30 normal fœtuses Professor Hannover found in but one specimen a rudiment of the canal of Rathke. If we now recognise an arrest of development in the closed extremity and dome-like shape of the upper end of the pharynx, we are also obliged to regard the opening in the sella turcica as a formation of the same nature, and to admit that these peculiarities of structure which are found in the same region must have a common origin.

To be able to judge of the frequency of the occurrence of cyclopia in man the author has prepared the following table, framed partly from the results to be found in the writings of others, and partly from his own observations in the Museum of Copenhagen and other places. A comparison of the number of cases occurring in man with those occurring in other animals has no real interest; for, in all probability, abnormal specimens of the human fœtus have been preserved and described oftener than in cases of any other animal. But a comparison between the animals themselves presents more interest:—

	Number of Fœtuses Affected with Cyclopia
Man - - - - -	103
Ox - - - - -	30
Sheep - - - - -	51
Goat - - - - -	9
Stag - - - - -	1
Pig - - - - -	130
Horse - - - - -	10
Dog - - - - -	22
Cat - - - - -	12
Rabbit - - - - -	3

We see by this table that cyclopia among mammals is found almost exclusively in the domesticated species, and among those that the pig is the one which presents the anomaly by far the most frequently, even if we take into account the absolute number of living domestic animals, and also the circumstance that the sow brings forth more young at a birth than most other animals of this category.

In man some very rare cases are cited of twins presenting this anomaly. In birds cyclopia is very rare, and we are acquainted with some isolated cases only—occurring in the fowl, the pigeon, the turkey, the duck, and the goose. Among reptiles and fishes the anomaly is not known to occur.

Cyclopia is much more frequent in the male human fœtus than in the female. In a collection made of 71 cases of which the sex was known there were 55 males to 16 females.

Cyclopic specimens of the human fœtus are generally less well nourished and developed than are the anencephalous. The two species of monsters attain about the same age. Half the cyclopic fœtuses arrive at the full term, the remainder attain the age of six or eight months. In no case are they viable. The cause of this must be sought either in the defective formation of the brain, or in the circumstance that they can respire only by the mouth. They usually die at the end of a few hours.

Cyclopia in man often co-exists with hydrocephalus, but rarely with anencephaly. In another memoir the author deals with its co-existence with synotia. Of other monstrosities which sometimes accompany cyclopia may be mentioned—malformation of one or both ears, increase in number of fingers or toes, inverted distortion of hands or feet, shortening or fusion of the limbs (sympodia), incomplete development of the genital organs (absence of testicles from the scrotum), occlusion of the anus, hare-lip, &c.

With the exception of the first two monstrosities, these malformations are but slightly more frequent among cyclopic fœtuses than among others. Among internal monstrosities may be mentioned the defects which are often presented by the circulatory system. The cases of cyclopia with a proboscis are much more frequent than those without. The curving upwards of the lower jaw, which is frequent in animals, does not occur in man; in some rare cases the lower jaw may project a little beyond the upper.

In the original memoir the author gives the anatomy of 18 cyclopic fœtuses, and describes within 2 of the 13 specimens found in the museums of Copenhagen. The remainder of the memoir is devoted to a description of some of the principal results found in the investigation of this form of monstrosity in its various details.

The form of cranium usually met with in the cyclopic form is the brachycephalic; the lower part of the occiput is plane, and the forehead

narrow. As the perpendicular part of the frontal bone makes a very obtuse angle with the horizontal portion, the result is that the anterior lobes of the brain come to rest on an oblique plane, instead of the horizontal one on which they usually repose. The cranial bones are, as a rule, strongly ossified, and the sutures are united early. The fontanelles are small, indeed almost absent.

Cases of cyclopia with presence of two eyes are rare in man. When present they occupy the usual position opposite one another; but the space separating them is smaller than normal, and the intermediate septum is always absent, at least behind. When but one eye is present it is placed in the middle of the face, or even lower down, on account of the fact that the frontal bone is higher (longer in the vertical direction), while the superior maxillæ are compressed from above downwards. The size and form of the single eye varies according to the degree of cyclopia. Usually the eyelids are insufficient to cover it completely. When the eyes are fused the tarsi of the lids unite also—the superior at an earlier date than the inferior. The fusion of the latter is at first retarded by the caruncula lacrimalis. Besides this, the two lids unite on each side of the outer canthus.

In the cases of cyclopia in which both eyes remain distinct there can be no question of the existence of a trunk, if we understand by the term, an organ which, like that of the elephant, hangs freely, and is furnished with nostrils at its extremity. The nose, in fact, preserves, with some changes in form and aspect, its usual place between the eyes, and the orifice of the nasal fossæ is limited, as in ordinary cases, by the internal margins of the frontal apophyses of the superior maxilla, which take the form of a trumpet closed behind.

On the other hand, when there is but one eye we find, in about three-fourths of such cases—whatever be the degree of fusion of the two globes—a proboscis, which is situated immediately above the upper eyelid, or in the angle formed by the eyelids, and forming a body covered by the cutaneous investment of the face, of which the length varies from 13 to 20 mm., and the diameter from 8 to 15 mm. It usually occupies a dependent posture (in front of the eye) when taking a straight course; sometimes (exceptionally in man) it curves a little from below upwards—a position very common among the lower animals. At the far extremity of this proboscis is found a single opening—in case of the lower animals sometimes double—which leads into a canal. This latter I have always found single in man (Hannover). The length of this canal is very variable; it is sometimes as long as the proboscis itself, but it often measures but from 3 to 5 mm. This canal, which is surrounded by the nasal cartilage, always ends in a *cul-de-sac*, and is lined by cylindrical or ciliated epithelium. The proboscis represents the external segment of the nasal organ, which, at the beginning, is represented by a sac, or

penetrates from without as a canal, single or double, without other exit. This sac has been arrested in its development, and has never communicated with the buccal cavity. The characteristic feature of the proboscis as a nasal organ is the cartilage which it contains, and which constitutes a portion of the ethmoidal segment of the primordial cartilage.

The true reason on account of which the deformed nose with single eye of the cyclopic fœtus is situated above the eye must be sought for in the primordial cartilage, on which the brain immediately rests. In the normal condition the anterior cerebral vesicle passes forwards between the optic vesicles, and the primordial cartilage should necessarily accompany it, since it constitutes the floor of the cerebral vesicle; but when a single eye is formed in the median plane of the body, and that the place is, so to speak, occupied, the primordial cartilage is forced to take one which shall be always above the eye. About midway between the eye and the mouth we usually find in the skin a feebly-marked convex furrow. The diminished size of the mouth is partly due to the absence of the ossa-intermaxillaria. What contributes to throw the inferior maxilla forwards is the fact that the temporal fossa and the temporal muscle, which are normally placed on the side of the head, are, in the cyclopic fœtus, turned forwards and inwards.

The following is a description of the different bones in the cyclopic cranium, omitting the occipital, parietals, and inferior maxilla, which present no essential peculiarity:—

Os frontale.—We know that this bone in the normal fœtus is distinctly composed of two halves, of which the union commences below. There usually exists in cyclopia but a single eminence with a radial extension, arising at the beginning from a single point of ossification in the middle of the forehead; but there are exceptions, and we have observed cases with well-pronounced cyclopia where the two halves of the bone remained ununited, and where two pieces existed, each with corresponding radiation. The fusion of the anterior lobes of the brain into one mass is, accordingly, not necessary as a consequence of the existence of a single piece representing the frontal bone.

The horizontal portion of the bone always makes a very obtuse angle with the perpendicular part. This is specially striking on the posterior surface of the bone, where it would seem that the two portions form but one piece, without visible line of separation, so that they make a nearly vertical wall, against which the brain is supported. The internal orbital (angular) processes of the two sides being fused, or displaced, the ethmoidal notch is completely closed, or indicated either by a suture or by a smooth fissure—narrow, short, and straight, triangular, or pointed in front, and occupied by cartilaginous traces of the cribriform portion of the primordial cartilage, or merely by the cerebral meninges.

Ossa temporalia.—When the cyclopic condition is highly developed the

squamous portion of the bone is displaced forwards, the result being that the temporal fossa and corresponding muscle are found to be placed on the anterior aspect of the cranium. The osseous tubercle formed by the superior and external semicircular canals, and which projects from the occipito-mastoid segment of the primordial cartilage, varies, as in normal skulls. When the cyclopia is developed to an extreme degree, and that the size of the body of the sphenoid bone is reduced, the petrous portion is placed more transversely than in the normal state, and the inner extremities of those of the opposite sides nearly touch.

Ossa zygomatica.—Their position is changed on account of the absence of the intermaxillary bones and smaller size of the superior maxillæ. For these reasons their external surfaces are thrown further forwards, and the inner extremities of their maxillary processes are brought nearer to one another than in the normal state.

Ossa maxillæ superioris.—The antrum of Highmore is always absent, even when there are two distinct orbits, and we may say that the upper and lower walls of the body of the bone are pressed against one another. The bodies of the bones of both sides, with their superior surfaces, form for the eye, be it single or double, a bed of triangular form, slightly hollowed out, sloping from before backwards, and united in the median line by a smooth suture, or a delicate crest, which usually bifurcates in front, and between the branches of which we find the lacrimal bones and a trace of the lacrimal groove.

When two complete orbits exist the frontal process has its outer face reverted forwards, and is united on either side to the internal orbital process by a smooth suture, interrupted by an interval from which the proboscis (nasal organ) takes origin, and presents itself as a round (or oval) opening, or curved in the form of a trumpet; but if the eyes are fixed the frontal process either disappears completely or is replaced by a nasal spine or a small button-like projection. In man there remains not the smallest trace of separate intermaxillary bones.

With regard to the teeth, we usually find two incisors, which may be larger than the ordinary ones, or, rarely, three. Outside the incisors there is a canine on each side. The molars call for no special remark.

Ossa lacrimalia.—When two orbit exists these bones which ossify, not in the primordial cartilage, but in membrane, may be well developed, and even strongly ossified; they are vertically placed in the anterior part of the (incomplete) interorbital septum, and, although there is no crista lacrimalis, a distinct lacrimal fossa exists, but without the usual groove of exit. In the case of a single orbit they are placed in a horizontal position, behind the nasal spine of the superior maxilla. When the cyclopia is more markedly developed they are small and more deformed, and occupy the space—rhomboidal or triangular—formed by the bifurcation of the crest, on the upper surface of the superior maxilla.

Ossa nasalia.—We may find these bones in the cyclopic fœtus of two eyes, but they present a superficial extent of but a few square millimetres. On the other hand, they are entirely wanting in all the skulls with a single orbit which Professor Hannover had the opportunity of examining.

Ossa palatina.—Besides the normal part of the horizontal portion of this bone, there is an osseous mass which presents itself as a new formation, and whose existence is, without doubt, directly connected with the manner in which the pharynx ends above—*i.e.*, as a dome, and ending in a *cul-de-sac.* From the posterior border of the horizontal segment springs, vertically, an osseous plate—of form trapezoidal, tongue-shaped, or cordiform, and placed transversely, so as to close the posterior nares, but only apparently, for these openings do not really exist. This process arises from the horizontal plate at a right angle, or (more usually perhaps) forming an angle slightly obtuse—it is always more obtuse on the anterior aspect of the process, and ascends, resting by its external border against the internal border of its internal pterygoid plate, and filling up the space between the plates of the opposite sides without becoming fused with them. The process ends above at the inferior surface of the body of the sphenoid, a little above or in front of the spheno-occipital synchondrosis, also without fusion to this bone, to which it is merely connected by a strong bond of tendinous tissue.

The deformities of the bones which we just have been examining should be regarded as secondary, since they are the consequence of defects presented by the præchordal portion of the primordial cartilage of the cranium. The incomplete ossification which takes place in that part of the primordial cartilage influences the form of the bones, and the latter are in some measure constrained to arrange themselves according to it. The bones which we now proceed to consider in relation to the primordial cartilage are the sphenoid and the ethmoid.

Os sphenoideum.—The body of the sphenoid bone presents the normal width in the cyclopic fœtus when the latter is possessed of two orbits, but becomes compressed when the cyclopia takes on a higher degree of development. The lower part of the anterior surface is then depressed, and, by degrees, becomes more and more hollowed out, presenting but a rudiment of the sphenoidal sinuses, and no trace of the cornua of Bertin. The body of the bone continues to be hollowed out—the excavations extend even to the bottom of the sella turcica; the latter, however, remains complete, and the transversal ossification there found is still distinct. The *lamina quadrilateralis* of the sella turcica is also maintained in good condition, even after the disappearance of the whole inferior portion of the body of the bone. At the bottom of the sella turcica we nearly always observe posteriorly a foramen without any outlet, of variable size and depth, having sometimes the form of a funnel, and covered by the dura mater. Prof. Hannover has given to this formation the name of

the *canal of Rathke*, and has already shown its importance as a vestige of the communication of the buccal cavity with the brain (*infundibulum*). Among the lower animals he has recognised but very feeble traces of it. *Great wings.*—These are at first normal, but, as cyclopia develops, they increase in size, become more arched, are, by degrees, thrown forwards and inwards, and so pressed out of their normal position that the external surface at last comes to be turned directly forward. From this results a change in the whole form and position of the temporal fossa and muscle, which, according to all probability, should influence the lower jaw. The superior orbital fissure has a sharp margin, and the fissure of the two sides limits a space which presents the form of a lyre, sometimes a little asymmetrical; where the lesser wings are lodged they become gradually parallel, and approximated more and more to one another as the body of the sphenoid diminishes, and when the latter is greatly reduced the two fissures are fused in one, which occupies the median line. *Lesser wings.*—The part between these which, externally on the side of the bone, forms the anterior and superior root of the optic foramen, and is, in front, continued into the *lamina cribriformis*, is now found to be wanting, wholly or in greater part, and its place is occupied by the cerebral meninges, which are stretched across between the internal borders of the lesser wings, or between their anterior portions. Nevertheless, the membrane so stretched has sometimes a layer of cartilage on its under-surface, although the layer may be so thin as to require the use of the microscope to demonstrate its presence.

The interval between the lesser wings may be of greater or less extent; they may approach one another to the point of touching, or in such a manner that their inner borders, on account of the absence of the intervening plane, may become completely fused, especially in front. Behind, the lesser wings end in a rounded point, and, a little in front of this, on the inferior aspect, the posterior inferior root of the optic foramen forms a rounded cylinder of varying length, which rests against the middle clinoid process (with which it is, however, ordinarily fused), or against the lamina quadrilateralis of the sella turcica. This cylinder is usually ossified, but it may be cartilaginous. The lesser wings, themselves, become pyriform, thick and distorted, have but a very limited connection with the frontal bone, and may, indeed, be completely absent. The *pterygoid processes* are usually strongly developed, and placed transversely, especially the external plate, and contribute but slightly to the closure of the upper end of the pharynx. We also have in the cyclopic fœtus evidence that the external pterygoid plate is an epiphysis of the great wing, and not of the body of the sphenoid, as Professor Hannover has already indicated in his memoir "On the Primordial Cartilage of the Cranium."[a]

Os ethmoideum.—Whether there be two orbits or but one, the cribriform

[a] See Dublin Journal of Medical Science. Loc. cit.

plate of the primordial cartilage is absent, which, in the normal human fœtus, has even a greater extent than when it is ossified. The absence is complete, or nearly so, and, in cases where this portion is represented, it is but by the mass filling the narrow fissure which is found in the horizontal portion of the frontal bone, and which is a trace of the usual notch of that bone. In front, the primordial cartilage passes under the nasal spine of the frontal bone into the nasal portion which extends into the proboscis (already described). The olfactory nerve and bulb are wanting in the cyclopic fœtus. The author has, in one skull, found a small oval cartilaginous plate which represents the cribriform plate of the primordial cartilage, and in which he has observed a small foramen without outlet, resembling those with which the cribriform plate is furnished, in normal cases, for the passage of the olfactory nerve.

On the other hand, the primordial cartilage returns differently in the region of the cornua, the lamina papyracea, and lamina perpendicularis, according as there are two orbits or only one. In the former case we usually find a chamber which is never complete, but presents a lacuna, of greater or less size, directed downwards towards the body of the superior maxilla, and backwards towards the sphenoid bone. Externally this chamber is formed by the lacrimal bone and the lamina papyracea, and when the orbits are separated but by a narrow interval these two bones unite into one, and leave but a narrow chamber. But if the interval between the orbits is greater there is between them a space of greater or less extent for the portions of the ethmoidal part of the primordial cartilage—viz., the cartilage of the cornua, of the lamina papyracea, and, possibly, even of the lamina perpendicularis, to say nothing of the cartilage of the nasal portion, of which the presence in the external protuberance (proboscis already described) is quite certain. The remains of the ethmoidal portion of the primordial cartilage are, generally speaking, pushed forwards, if we include the contents of the trumpet-shaped opening. To this is necessary to add the general observation that the lamina papyracea, according to Hannover's researches, does not ossify in the primordial cartilage, but in membrane, and that such is also the case with a part, and, probably, the greater part, of the walls of the labyrinthine cells. The lacunæ presented by the ethmoidal portion of the primordial cartilage are, accordingly, greater than we would have been, at first sight, able to suppose.

But when there is only a single orbit, and a trumpet-shaped organ, we always, so to speak, find an ossification at the place where the rudimentary cribriform plate passes into the nasal portion, accordingly to the base of the tube (trumpet), and we can already distinguish it through the skin. This ossification forms a half ring of from 2 to 9 mm. in height, and 2 to 6 mm. in breadth, and is convex backwards. At the midst of its anterior face it bears a cartilaginous or ossific crest parallel to the fore border,

and bent in front of the half ring in such a way that there are three crests. The half ring must be regarded as an imperfect ossification of a rudimentary perpendicular portion, with an indication of a double nasal cartilage, and of a nasal canal on each side of the crest. The canal of the (nasal) tube is always arrested in its course of development before ossification is attained.

As we already know, the nasal portion of the primordial cartilage does not ossify; it also has, in the human fœtus, a greater extent than it has in the adult. The cartilage passes into the nasal tube, and is relatively well developed in this rudimentary organ; it forms a hollow cylinder, lined with mucous membrane, which passes to about the middle of the tube, is rounded towards the base, and ends in two wings. We usually observe a slight groove longitudinally placed along the dorsal aspect.

Nervus opticus.—The chiasma is either completely absent or very imperfectly formed, even when there are two eyes. The optic nerve passes forwards across an opening of the anterior part of the membrane which is stretched between the alæ parvæ or across the lesser wings themselves, when they are united. In the contrary condition (of non-union) the nerve passes in front of the posterior inferior root of the optic foramen, as the anterior superior root is absent. When there are two eyes, and but a single optic foramen, the nerve, after having passed through it, divides, still surrounded by its membranes. Its section is round or oval, sometimes reniform, with the hilum looking upwards. Its substance is as soft as that of the cerebral mass; it is sometimes atrophic, and the neurilemma may be entirely empty, forming a thick, solid mass. If the alæ parvæ are completely absent the nerve is also wanting.

COIN IN THE LARYNX.

Dr. Archambault details an interesting case in the *Gazette des Hôpitaux.* A young man of twenty-three placed a 50 centime piece (about the size of a sixpence) in his mouth, and, in endeavouring to speak, it lodged in his larynx. From that moment respiration became very difficult, and he was continually threatend with suffocation. Every effort made to extract the coin from above proved futile. The piece of money was in a horizontal position between the true and false vocal cords. Four days after the accident, Prof. Péan cut the thyroid cartilage in the median line and up to within a very small distance from the false vocal cords. The foreign body was seized and removed. The patient was well on the eighteenth day.—*St. Louis Med. and Surg. Journal*, November, 1887.

SANITARY AND METEOROLOGICAL NOTES.

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Vital Statistics

For four Weeks ending Saturday, March 24, 1888.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000:—

Towns	Weeks ending				Towns	Weeks ending			
	March 3.	March 10.	March 17.	March 24.		March 3.	March 10.	March 17.	March 24.
Armagh -	36·1	25·8	36·1	20·7	Limerick -	44·5	41·8	27·0	48·5
Belfast -	39·0	34·0	31·5	30·1	Lisburn -	24·2	38·7	38·7	24·2
Cork -	39·6	39·6	31·2	31·2	Londonderry	21·4	19·6	46·4	25·0
Drogheda	29·6	0·0	33·8	33·8	Lurgan -	25·7	41·0	35·9	46·2
Dublin -	33·1	32·0	28·1	29·2	Newry -	24·6	17·6	10·5	10·5
Dundalk -	26·2	21·8	13·1	26·2	Sligo -	38·5	24·1	14·4	9·6
Galway -	40·3	43·7	33·6	43·7	Waterford -	37·0	20·8	32·4	48·6
Kilkenny	38·1	12·7	12·7	25·4	Wexford -	34·2	47·0	21·4	42·8

In the week ending Saturday, March 3, 1888, the mortality in twenty-eight large English towns, including London (in which the rate was 21·9), was equal to an average annual death-rate of 21·5 per 1,000 persons living. In Glasgow the rate was 27·5; and in Edinburgh it was 21·0.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 35·3 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 4·0 per 1,000, the rates varying from 0·0 in Londonderry, Galway, Drogheda, Sligo, Lurgan, and Armagh, to 14·5 in Lisburn—the 5 deaths from all causes registered in the last-named district comprising 3 from measles. Among the 170 deaths from all causes registered in Belfast are 9 from measles (being 1 over the number from that disease in the preceding week), 1 from scarlatina, 9

from whooping-cough (an increase of 3 as compared with the number in the preceding week), 2 from diphtheria, and 2 from simple-continued fever. The 61 deaths in Cork comprise 7 from measles (being 3 over the number from that disease in the preceding week). Of the 7 deaths in Newry 2 resulted from measles; and the 8 deaths in Wexford comprise 1 from measles and 1 from diarrhœa.

In the Dublin Registration District the births registered during the week amounted to 187—107 boys and 80 girls—and the deaths to 230—108 males and 122 females.

The deaths represent an annual rate of mortality of 34·0 in every 1,000 of the estimated population—omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 33·1 per 1,000.

Twenty-nine deaths from zymotic diseases were registered, being 1 over the average for the corresponding week of the last ten years, and 6 over the number for the week ended February 25. They comprise 1 from small-pox (that of a boy, aged twelve years, who died in the Hardwicke Hospital on the 23rd of February), 3 from measles, 5 from scarlet fever (scarlatina), 6 from whooping-cough, 3 from diphtheria, 5 from enteric fever, 1—that of a woman admitted to hospital from without the Dublin Registration District—from hydrophobia, 2 from diarrhœa, &c.

Four cases of small-pox were admitted to hospital, against 1 admission in the preceding week ; 4 small-pox patients were discharged, and 11 remained under treatment on Saturday, being equal to the number in hospital on Saturday, February 25.

The number of admissions of scarlatina cases, which had declined from 20 in the week ended February 11 to 9 in the following week, and to 5 in the week ended February 25, rose to 13 this week; 11 patients were discharged, and 62 remained under treatment on Saturday, being 2 over the number in hospital at the close of the preceding week.

Two cases of typhus and 7 of enteric fever were admitted, against 5 cases of the former and 6 of the latter disease admitted during the preceding week. Sixteen cases of typhus and 27 of enteric fever remained under treatment in hospital on Saturday.

Fifty-six deaths from diseases of the respiratory system were registered, being equal to the number for the preceding week, and 2 over the average for the ninth week of the last ten years. They comprise 43 from bronchitis, 8 from pneumonia or inflammation of the lungs, and 2 from croup.

In the week ending Saturday, March 10, the mortality in twenty-eight large English towns, including London (in which the rate was 23·0), was equal to an average annual death-rate of 23·3 per 1,000 persons living. In Glasgow the rate was 29·4; and in Edinburgh it was 18·8.

The average annual death-rate in the sixteen principal town districts of Ireland was 32·3 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 3·7 per 1,000, the rates varying from 0·0 in eight of the districts to 8·6 in Wexford—the 11 deaths from all causes registered in that district comprising 1 from whooping-cough and 1 from diarrhœa. Among the 148 deaths from all causes registered in Belfast are 12 from measles (being 3 over the number from that disease in the preceding week), 2 from scarlatina, 6 from whooping-cough (a decrease of 3 as compared with the number in the preceding week), 1 from simple-continued fever, 2 from enteric fever, and 1 from diarrhœa. The 61 deaths in Cork comprise 3 from measles (being 4 under the number from that disease in the preceding week), and 1 from typhus, 1 from diphtheria, and 1 from diarrhœa.

In the Dublin Registration District the births registered during the week amounted to 220—108 boys and 112 girls—and the deaths to 224—109 males and 115 females.

The deaths represent an annual rate of mortality of 33·1 in every 1,000 of the estimated population—omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 32·0 per 1,000.

Thirty deaths from zymotic diseases were registered, being 1 over the number for the preceding week, and also 1 in excess of the average for the tenth week of the last ten years. They comprise 4 from measles, 5 from scarlet fever (scarlatina), 1 from typhus, 7 from whooping-cough, 2 from diphtheria, 1 from ill-defined fever, 1 from enteric fever, 2 from diarrhœa, 2 from dysentery, 1 from erysipelas, &c.

Only 1 case of small-pox was admitted to hospital, against 4 admissions in the preceding week. One small-pox patient was discharged, and 11 remained under treatment on Saturday, being equal to the number in hospital on Saturday, March 3.

Thirteen cases of scarlatina were admitted to hospital, being equal to the admissions for the preceding week; 10 patients were discharged, 2 died, and 63 remained under treatment on Saturday, being 1 over the number in hospital on Saturday, March 3.

Five cases of typhus, and 8 of enteric fever were admitted, against 2 cases of the former and 7 of the latter disease admitted during the preceding week. Sixteen cases of typhus and 28 of enteric fever remained under treatment in hospital on Saturday.

Fifty-six deaths from diseases of the respiratory system were registered, being equal to the number for the preceding week, and 1 under the average for the tenth week of the last ten years. They comprise 37 from bronchitis and 12 from pneumonia or inflammation of the lungs.

In the week ending Saturday, March 17, the mortality in twenty-eight large English towns, including London (in which the rate was 19·5), was equal to an average annual death-rate of 20·3 per 1,000 persons living. In Glasgow the rate was 26·9; and in Edinburgh it was 17·2.

The annual average death-rate represented by the deaths registered last week in the sixteen principal town districts of Ireland was 29·4 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 3·5 per 1,000, the rates varying from 0·0 in Londonderry, Drogheda, Dundalk, Sligo, and Armagh, to 19·3 in Lisburn—the 8 deaths from all causes registered in the last-named district comprising 3 from measles, and 1 from whooping-cough. The Registrar of the district of Lisburn remarks—"Measles and pertussis (whooping-cough) very prevalent, and several cases of enteric fever lately." Among the 137 deaths from all causes registered in Belfast are 11 from measles (being 1 under the number from that disease in the preceding week), 2 from scarlatina, 4 from whooping-cough, 1 from diphtheria, 1 from enteric fever, and 2 from diarrhœa. The 48 deaths in Cork comprise 3 from measles. Among the 20 deaths in Limerick are 2 from measles, and 1 from typhus; and the 7 deaths in Lurgan comprise 1 each from measles, whooping-cough, and diphtheria.

In the Dublin Registration District the births registered during the week amounted to 203—107 boys and 96 girls—and the deaths to 196—98 males and 98 females.

The deaths represent an annual rate of mortality of 28·9 in every 1,000 of the estimated population—omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 28·1 per 1,000.

Nineteen deaths from zymotic diseases were registered, being 11 under the number for the preceding week, and 9 below the average for the eleventh week of the last ten years. They consist of 5 from measles, 3 from scarlet fever (scarlatina), 3 from typhus, 1 from diphtheria, 1 from simple-continued fever, 4 from enteric fever, and 2 from diarrhœa.

Two cases of small-pox were admitted to hospital, against 1 admission in the preceding week. In the week ended March 3, 4 cases of the disease had been admitted. One small-pox patient died, and 12 cases remained under treatment on Saturday, March 17, being 1 over the number in hospital on Saturday, March 10.

Ten cases of scarlatina were admitted to hospital, showing a decline of 3 as compared with the admissions for each of the two weeks preceding; 12 patients were discharged, 1 died, and 60 remained under treatment on Saturday, being 3 under the number in hospital on the previous Saturday.

Thirteen cases of typhus and 2 of enteric fever were admitted, against

5 cases of the former and 8 of the latter disease admitted during the preceding week. Twenty-two cases of typhus and 25 of enteric fever remained under treatment in hospital on Saturday.

Forty-eight deaths from diseases of the respiratory system were registered, being 8 under the number for the preceding week, and 3 below the average for the eleventh week of the last ten years. They comprise 28 from bronchitis, 8 from pneumonia or inflammation of the lungs, 3 from croup, and 1 from pleurisy.

In the week ending Saturday, March 24, the mortality in twenty-eight large English towns, including London (in which the rate was 20·2), was equal to an average annual death-rate of 21·1 per 1,000 persons living. In Glasgow the rate was 27·2; and in Edinburgh it was 20·4.

The average annual death-rate in the sixteen principal town districts of Ireland was 30·8 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 3·2 per 1,000, the rates varying from 0·0 in nine of the districts to 10·3 in Lurgan—the 9 deaths from all causes registered in that district comprising 2 from measles. Among the 131 deaths from all causes registered in Belfast are 11 from measles (being equal to the number of deaths from that disease in the preceding week), 5 from whooping-cough, 1 from diphtheria, 2 from simple-continued fever, 2 from enteric fever, and 1 from diarrhœa. The 48 deaths in Cork comprise 4 from measles; and the 36 deaths in Limerick comprise 1 each from measles, typhus, whooping-cough, and diphtheria. A death from hydrophobia was registered in Londonderry, No. 2 District.

In the Dublin Registration District the births registered during the week amounted to 202—102 boys and 100 girls—and the deaths to 201—105 males and 96 females.

The deaths represent an annual rate of mortality of 29·7 in every 1,000 of the estimated population—omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 29·2 per 1,000.

Twenty-five deaths from zymotic diseases were registered, being 6 over the number for the preceding week, but 7 under the average for the twelfth week of the last ten years. They comprise 5 from measles, 4 from scarlet fever (scarlatina), 1 from typhus, 4 from whooping-cough, 3 from simple-continued and ill-defined fever, 2 from dysentery, 1 from diarrhœa, 1 from erysipelas, &c.

Four cases of small-pox were admitted to hospital, against 2 admissions in the preceding week. Six small-pox patients were discharged during the week, and 10 remained under treatment on Saturday, being 2 under the number in hospital on Saturday, March 17.

Fourteen cases of scarlatina were admitted to hospital, being 4 over the admissions for the preceding week. An equal number of scarlatina patients were discharged, leaving the number (60) of cases of the disease in hospital on Saturday the same as that at the close of the preceding week.

Thirty cases of typhus were admitted, being an increase of 17 as compared with the admissions for the preceding week. Three patients were discharged, and 49 remained under treatment on Saturday, being 27 over the number in hospital on Saturday, March 17.

The admissions to hospital also include 4 cases of enteric fever.

Forty-six deaths from diseases of the respiratory system were registered, being 6 under the average for the corresponding week of the last ten years, and 2 under the number for week ended March 17. They comprise 29 from bronchitis, 7 from pneumonia or inflammation of the lungs, and 3 from croup.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N., Long. 6° 15′ W., for the Month of March, 1888.

Mean Height of Barometer,	29·646 inches.
Maximal Height of Barometer (on 21st, at 9 a.m.),	30·481 „
Minimal Height of Barometer (on 28th, at 1 p.m.),	28·556 „
Mean Dry-bulb Temperature,	38·9°.
Mean Wet-bulb Temperature,	36·8°.
Mean Dew-point Temperature,	34·0°.
Mean Elastic Force (Tension) of Aqueous Vapour,	·199 inch.
Mean Humidity,	82·9 per cent.
Highest Temperature in Shade (on 8th),	58·6°.
Lowest Temperature in Shade (on 17th),	26·9°.
Lowest Temperature on Grass (Radiation) (on 5th),	21·6°.
Mean Amount of Cloud,	68·6 per cent.
Rainfall (on 18 days),	3·753 inches.
Greatest Daily Rainfall (on 11th),	1·012 inches.
General Directions of Wind,	W.N.W., N.E., N.

Remarks.

The month was very cold, except for a brief period from the 6th to the 10th inclusive, and also on the 21st and 22nd. The precipitation, which was very large, was chiefly in the form of snow, or sleet, and hail; and the winds, which were high and squally, came principally from polar points of the compass.

The cold was intense in Northern Europe (Russia, Finland, and Scandinavia) throughout the month, whereas it became much less intense than it had been in February in Central and Southern Europe. Indeed,

during the last ten days there was a general thaw in France, Germany, and Austria.

In Dublin the mean temperature (39·8°) was decidedly below the average (43·5°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 38·9°. In the twenty-three years ending with 1887, March was coldest in 1867 and 1883 (M. T. = 39·0°) and warmest in 1868 (M. T. = 47·3°). In 1876 the M. T. was 41·1°; in the year 1879 (the cold year) it was 42·5°. As a general rule, February in Dublin is only a shade colder than March. This is due to the fact that the Continental anticyclone embraces the British Isles and Scandinavia in March, causing easterly winds. In the present year February was only 1·2° colder than March, and the temperature even in January was actually 2·3° above that of the past month.

The mean height of the barometer was 29·646 inches, or as much as 0·277 inch below the average value for March—namely, 29·923 inches. The mercury rose to 30·481 inches at 9 a.m. of the 21st, and fell to 28·556 inches at 1 p.m. of the 28th. The observed range of atmospherical pressure was, therefore, as much as 1·925 inches—that is, a little less than two inches. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 38·9°, or 0·9° above the value for February, 1888; that calculated by Kaemtz's formula—viz., *min.* + (*max.* — *min.* × ·41) = *Mean Temp.*—from the means of the daily maxima and minima was also 38·9°, or 3·8° below the average mean temperature for March, calculated in the same way, in the twenty years, 1865–84, inclusive (42·7°). The arithmetical mean of the maximal and minimal readings was 39·8°, compared with a twenty years' average of 43·5°. On the 8th the thermometer in the screen rose to 58·6°—wind S.W.; on the 17th the temperature fell to 26·9°—wind N.W. The minimum on the grass was 21·6° on the 5th. The rainfall was 3·753 inches, distributed over 18 days. The average rainfall for March in the twenty years, 1865–84, inclusive, was 2·081 inches, and the average number of rainy days was 16·5. The rainfall and the rainy days, therefore, were decidedly above the average. In 1867 the rainfall in March was very large—4·972 inches on 22 days; in 1866 also 3·629 inches fell on 21 days. On the other hand, in 1871, only ·815 of an inch was measured on 12 days, and in 1874 only ·953 inch fell, also on 12 days. In 1887, 1·485 inches of rain fell on 15 days.

Solar halos appeared on the 19th and 27th. The atmosphere was foggy on the 14th, 24th, and 28th. High winds were noted on 11 days, reaching the force of a gale on 5 days, the 7th, 8th, 9th, 13th, and the 28th. Snow or sleet occurred on the 11th, 12th, 13th, 15th, 16th, 18th, 19th, 25th, 26th, and 28th—10 days in all; and hail fell on the 1st, 12th, 13th, 15th, 16th, 19th, 24th, 25th, 26th, 27th, and 28th.

In the period ending Saturday, the 3rd, the barometer was high over Scotland and Ireland, low over Scandinavia and the Peninsula. The

weather was, in consequence, cold, with Polar winds between N.E. and N.W.

In the course of the week ending Saturday, the 10th, the weather underwent a complete change in the British Islands and indeed throughout the greater part of Western Europe. The piercing easterly winds of February gave place to warm, humid S.W. winds, which blew strongly after Tuesday and were accompanied by considerable falls of rain on Thursday and Friday. The increase of temperature extended to central Europe, but severe frost held in Northern Russia and throughout Scandinavia. In Dublin, the mean height of the barometer was 29·681 inches; highest, 30·091 inches at 7 p.m. of Tuesday; lowest, 28·894 inches at 3 40 p.m. of Friday. The mean dry bulb temperature was 44·6°. The shade thermometer rose to 58·6° on Thursday, having fallen to 30·7° on Monday. Rain fell in measurable quantity on three days to the total amount of ·941 inch, the maximal fall in 24 hours being ·650 inch on Saturday or rather in the early morning hours of Sunday, the 11th.

Very inclement weather prevailed throughout the week ending Saturday the 17th, owing to the advance eastwards across the British Islands of a series of deep atmospherical depressions between two areas of high pressure, of which one lay over Scandinavia and the other over the Iberian Peninsula. Intense cold held in Northern Europe, but in France and the southern portion of the United Kingdom temperature was occasionally high. In Dublin, the mean dry bulb temperature was 36·5°, or 8·1° below that of the previous week. The absolute maximum, 48·7°, really occurred at 9 p.m. of Saturday, the 10th, and subsequently the thermometer did not rise above 42·4°. The minimum in the screen was 26·9° on Saturday, the 17th, when the minimum on the grass was 22·0°. The barometer ranged between 28·898 inches at 9 a.m. of Sunday, and 30·214 inches at 9 p.m. of Saturday—the mean pressure being 29·434 inches. The precipitation, which was chiefly in the form of snow or sleet and hail, amounted to 1·980 inches on five days. On Sunday the rainfall measured 1·012 inches, and on Tuesday ·600 inch fell. Snow lay deep upon the Dublin mountains from Sunday afternoon.

The beginning and the end of the third week (18th to 24th inclusive) were cold, with a singularly keen and nipping air. A short-lived mild spell set in on Wednesday afternoon and lasted until Thursday evening. During the first three days the barometer was high in the North and Northwest, so that E. to N.E. winds prevailed, with occasional showers of hail and snow. On Wednesday pressure gave way in the North, and S.W. winds with warm sunshine were experienced, followed by clouds and soft rain. From Thursday both pressure and temperature were low, and the wind was light and variable, chiefly from polar points of the compass. In Dublin, the mean height of the barometer was 30·021 inches—the extremes being—highest, 30·481 inches at 9 a.m. of Wednesday; lowest,

29·380 inches at 9 p.m. of Saturday. The mean dry bulb temperature was 37·7°. The thermometers in the screen rose to 53·1° on Thursday and fell to 29·7° on Saturday. The minima in the screen were below 32° on five nights. The rainfall amounted to ·200 inch, distributed over four days. Of the total quantity, ·100 inch was measured on Wednesday. Snow or hail fell on the first two days of the period, and large hail late on Saturday night.

The record of the last week (25th to 31st inclusive) is again one of winterly weather, but towards the close of the period signs were not wanting of a coming change to milder and more spring-like conditions. Until Saturday, the 31st, atmospherical pressure was unusually low over the British Islands, a series of deep depressions culminating on Wednesday, the 28th, in a cyclone, near the centre of which the barometer receded to 28·39 inches at Scilly. This system subsequently filled up by degrees as it travelled slowly in an easterly direction towards the North Sea and the Continent. On the first three days of the week showers of snow, hail, and soft hail (graupel) fell at intervals. On Wednesday, the 28th, a fresh easterly gale prevailed, with heavy rain, hail, and wet snow. Two rather dull damp days followed, but the last day of the month proved fine and bright. In Dublin, the mean pressure was only 29·185 inches—highest, 30·033 inches at 9 p.m. of Saturday; lowest, 28·556 inches at 1 p.m. of Wednesday. The mean dry bulb temperature was 37·6°—max., 48·6° on Thursday; min., 27·9° on Monday. The rainfall measured ·632 inch on six days. Of this quantity ·320 inch was registered on Wednesday. A solar halo appeared on Tuesday.

In Dublin, the temperature fell to or below 32° on eleven days in the screen, and on twenty-six days on the grass. The mean minimal temperature on the grass was 28·7°, compared with 29·4° in February and 31·1° in January. In Dublin, the rainfall for the first quarter of 1888 amounted to 6·097 inches on 41 days, compared with 3·842 inches on 42 days in the corresponding quarter of 1887.

At Greystones, Co. Wicklow, the rainfall in March, 1888, amounted to 3·45 inches, distributed over 14 days. Of this quantity ·92 inch was measured on the 10th, 1·18 inches on the 11th, and ·28 inch on the 27th—that is, no less than 2·38 inches on three days.

FISTULA IN ANO.

Dr. Andrews (*Chicago Medical Journal and Examiner*, July, 1887) states the following injection has been found to be curative in the treatment of many cases of fistula in ano:—℞. Liq. hamamelis virg., ʒiij.; ferri persulph., ʒj.; acidi carbolici, gr. 2; glycerini, ʒij. Ft. injectio. Ten to fifteen drops to be injected into the fistula.

PERISCOPE.

MISTLETOE (VISCUM ALBUM).

In a paper to the *Medical and Surgical Reporter* (No. 1,593), Dr. Payne claims for mistletoe ecbolic powers superior to those of ergot. He adopts Dr. Long's statement (*Louisville Med. News*, 1878), "That instead of producing a continuous or tonic contraction, as does ergot, it stimulates the uterus to contractions that are natural, with regular intervals of rest. Consequently, it can be used in any stage of labour, and in primiparæ, where ergot is inadmissible." Like Dr. Park (*Pract.*, Nov., 1881), he believes it to be a good substitute for digitalis. A decoction of the fresh leaves in ounce doses, frequently repeated, is now preferred by Dr. Payne to the fluid extract which he formerly used.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

The Congress of American Physicians and Surgeons is a conjoint meeting of certain National Medical Societies so arranged that, while each Society preserves its own autonomy in every respect, and has its own meetings, papers and discussions during the day, the members of all the Societies meet together in the evenings to carry out the objects of the Congress. The main purpose of the Congress is the presentation and discussion of scientific subjects selected with reference to their general interest. It is intended that the Congress shall meet at Washington, D. C., once in three years. The President of each future Congress is to be elected by the Societies, each Society having the right to elect in turn. The officers of the Congress are a President, a Secretary, and a Treasurer, and as many Vice-Presidents as there are Societies taking part; the Vice-Presidents being the Presidents elect of the several Societies for the year of the Congress. The business of the Congress is managed by an Executive Committee composed of one representative appointed by each Society taking part. The President and Secretary of the Congress are *ex-officio* members of this Committee. The arrangement of the programme for the Congress of 1888 has been delegated to a Committee consisting of the President of the Congress (Dr. John S. Billings, U.S.A.), the Chairman of the Executive Committee (Dr. William Pepper, of Philadelphia), and the Secretary of the Congress (Dr. William H. Carmalt, of New Haven, Conn.). This Committee have adopted the following preliminary programme of the Congress to be held in Washington, D. C., on the evenings of September 18th, 19th, and 20th, 1888 :—Subjects for Report and Discussion—Tuesday evening, September 18th :—*Intestinal*

Obstruction in its Medical and Surgical Relations: Papers will be read by Dr. Reginald H. Fitz, of Boston, Professor of Pathological Anatomy in Harvard University, and Dr. Nicholas Senn, of Milwaukee, Professor of Surgery in the College of Physicians and Surgeons, in Chicago, Ill.; followed by a discussion. Wednesday evening, September 19th:—*Cerebral Localisation in its Practical Relations:* Papers will be read by Dr. Charles K. Mills, of Philadelphia, Professor of Diseases of the Mind and Nervous System in the Philadelphia Polyclinic and College for Graduates in Medicine, and Dr. Roswell Park, Professor of Surgery in the Buffalo Medical College; followed by a discussion. Thursday evening, September 20th:—*Address by the President*, John S. Billings, M.D., U. S. Army; to be followed by a general reception in the United States Army Museum Building.

TWO CASES OF FRACTURE OF THE BODY OF THE SCAPULA.

A. B. McKee, M.D., Sacramento, Cal., reports two cases of fracture of scapula. Case I.—J. B., aged twenty-five. Patient was hurled against a car stove, receiving the entire force of the concussion upon the posterior aspect of the left shoulder. On examination, it was found that he had sustained a fracture of the body of the left scapula about an inch above its apex. Case II.—D. C., a labourer, aged sixty, through a mis-step, was precipitated from a height of about ten feet. Examination resulted in the discovery of fracture of the sixth rib on either side, also of the clavicle at the junction of its inner and middle thirds, and likewise a well-defined fracture of the body of the scapula midway between its spine and apex. Fractures of this character are by no means of frequent occurrence. Out of a total number of 2,358 fractures of various kinds seen by Malgaigne at the Hôtel Dieu, there were but four cases of fracture of the scapula. Lonsdale collated eighteen cases of this injury from a total of 1,901 fractures at the Middlesex Hospital. Hamilton saw but eight cases; and Agnew, from whose works these statistics are taken, had treated only one-half that number. The records of the Pennsylvania Hospital, for a period of forty-four years, show that one per cent. of fractures were of this variety, and that in less than one-fourth of these lesions the fracture was confined to the body of the bone.—*Sacramento Medical Times*, May, 1887.

MORTALITY OF BABIES.

The following statistics are the results of Dr. Haukel's, of Glanchaw, researches on the mortality of babies:—1st. The mortality is influenced by the age of the mother—Mothers under 20 years of age, mortality 50·0; from 20 to 30, 36·66; from 30 to 40, 37·50; over 40, 45·31 2nd. Of children reared on the breast—Mothers 20 years of age, mortality 75·0; from 20 to 30, 86·55; from 30 to 40, 73·96; over 40, 79·69 3rd. Of the frequency of birth—First children, mortality 32·69; second,

32·54; third and fifth, 39·87; sixth to tenth, 44·31; eleventh, 46·15. The mortality is increased in cases of precocious marriages, and where the births rapidly follow each other.—*Bulletin de Médecine*, November 30, 1887.

CONDITIONS OF THE HAND AND ARM WHICH INTERFERE WITH THE PERFORMANCE OF PROFESSIONAL ACTS, ESPECIALLY PIANO-PLAYING.

In this lecture Dr. G. V. Poore gives the details of twenty-one cases of persons who suffered from impairment in the use of the hands and arms in consequence of excessive piano-playing. In no two of the cases was the cause of break-down precisely the same. There is, consequently, no such entity as pianists' cramp. The most common symptom is nerve tenderness, affecting different nerves, and apparently depending, not only on over-work, but other causes, such as strain or cold, and predisposed to by various bodily conditions, such as anæmia, rheumatism, gout, and dyspepsia. Besides the difficulty in piano-playing there was usually some general disability of the limb. That this is more common as a result of piano-playing than in writers' cramp is due to the fact that the muscles in the former case are larger, more numerous, and in more common requisition for general purposes than are the muscles (most commonly the interossei) whose break-down causes writers' cramp. In most cases the prognosis is good on the whole, although recovery is often slow. In treatment, the most important points are rest, blistering the painful nerves, and, when pain is removed, massage. Constitutional treatment is essential—change of air, iron, arsenic, and regulation of the bowels, as well as attention to indications caused by gout and rheumatism.—*Brit. Med. Journal*, February 26, 1887.

INFANTILE DYSPEPSIA.

Of mucilage of gum Acacia, 85 grammes; bicarbonate of sodium, 65 centigrammes; chloroform, 10 drops; essence of verbena, $3\frac{1}{2}$ grammes. One teaspoonful of this mixture every two or three hours for a six months' baby.—*Montpellier Médical.*

SODIUM PHOSPHATE IN INFANTILE DIARRHŒA.

Dr. H. C. Wood (*Therap. Gaz.*) says that in cases of infantile diarrhœa attended by clay-coloured or greenish stools, sodium phosphate in repeated small doses given in milk is of great value. In the types attended by alternate diarrhœa and constipation it is especially indicated.

OINTMENT FOR SYPHILITIC RASHES.

Diday recommends the following ointment for syphilitic rashes on the face and exposed surfaces:—℞. Biniodide of mercury, 80 centigr.; prepared lard, 30 grammes; mix.—*L'Union Médicale*, January 30, 1888.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XXI.—*On Supra-pubic Lithotomy and Vesical Suture.*[a] By KENDAL FRANKS, M.D. Univ. Dubl.; Fellow and Member of Council of the Royal College of Surgeons in Ireland; Fellow of the Royal Medical and Chirurgical Society of London; Surgeon to the Adelaide Hospital; ex-Scholar of Trinity College, Dublin.

ALTHOUGH I have adopted the method of supra-pubic lithotomy for the removal of vesical calculi only in a single case, I think it is scarcely necessary to offer any apology for bringing the subject before the Royal Academy of Medicine in Ireland, because, in the first place, the revival of this operation dates only from 1880, when Petersen, of Kiel, demonstrated the effects of distension of the rectum and bladder upon the anterior vesical fold of the peritoneum, and, secondly, because this operation has not yet been discussed by this Academy, although it has excited much interest and discussion both in England and in other countries. The operation itself is not a new one. Whether it was ever attempted by the ancients is a question for speculators who revel in the mists of antiquity, but the first authenticated case was recorded by Pierre Franco, of Lausanne, in 1556. He thus describes the case in his work "Petit Traité sur les Hernies":—"It occurred once that I wished to remove a stone from a child of ten years or so, but in

[a] Read before the Section of Surgery of the Royal Academy of Medicine in Ireland, Friday, April 13, 1888. [For the discussion on this paper see page 532.]

spite of all my efforts I could not bring it down to the neck of the bladder. In view of that fact, that the patient was very much exhausted by his sufferings, and that the parents desired rather that he should die than live in such agony, also that I did not wish it to be a reproach to me that it should not be extracted, although it was foolish, I decided to cut the bladder from the pubis, a little to the left. This I did, cutting upon the stone, which I had raised up with my fingers inserted in the fundament, and held under control with the hand of an assistant, who compressed the abdomen into the pelvis, and in this way I extracted it. The stone was as large as an egg. Nevertheless, the wound consolidated and was healed. However, I would not advise anybody to do this, but rather to use the procedure devised by us, of which we have spoken."[a]

Franco's advice seems to have been followed generally, and we do not hear much of the operation until 1680, when Hildanus described it, urging the necessity of bringing the stone into position near the opening, by putting the fingers into the rectum for that purpose. "It is interesting to observe," says Sir Henry Thompson, "that at this early date there was a recognition of the advantage to be obtained by making pressure on the stone in a direction from below upwards through the rectum."[b]

The next published case of supra-pubic cystotomy was by Proby, a Dublin surgeon, who removed a bodkin from the bladder of a young woman, aged twenty, in 1694.

The subsequent history of the high operation is one of warm discussions between its few supporters and its host of opponents. Its struggle for existence threatened to terminate fatally. In the earlier part of this century it had scarcely got beyond the position described by Bégin in 1826, that it should be resorted to only in those cases where "deformity of the pelvis and the size of the stone rendered the perinæal operation impossible."

During the present century, however, the high operation has enjoyed a much larger share of support than formerly, and that even before the modifications or improvements introduced by Petersen, of Kiel, in 1880, placed the supra-pubic method upon its present popular basis. Thus we find that Dr. C. W. Dulles, of America, collected 636 cases of the high operation performed by the older methods up to July, 1881, 70 of these being done by

[a] Annals of Surgery. Vol. II., p. 176.

[b] On Supra-pubic Lithotomy. Thompson. 1886. P. 6.

American surgeons.[a] The total death-rate has been 28·6 per cent., or 1 in 3·5. The operation has usually been reserved for large stones, and when we compare the results obtained by the sectio-alta in these cases with the results of lateral lithotomy, based on the table of perinæal operations published by Keith in 1869,[b] we find that even under the unfavourable conditions of the older methods the supra-pubic operation gives decidedly the best results for large stones. In the case of small calculi—that is, calculi weighing less than an ounce—the death-rate by the old supra-pubic method is 9·3 per cent., and by the lateral method 8·9 per cent., results so nearly equal that it is not to be wondered at that when improved methods of operating, based on Petersen's researches, were thrown into the scale on the side of the high operation, that it should have given it such a stimulus as to threaten to extinguish the lateral method.

Prof. Petersen, of Kiel, in his paper, read before the Congress of German Surgeons in April, 1880, advocated a return to the supra-pubic method.[c] In detailing the dangers which had hitherto beset this operative procedure, he enumerated three chief causes, and shows how each of these may be met. These dangers are—septic infection, urinary infiltration, and injury to the peritoneum. Septic infection is prevented by the adoption of antiseptic precautions to an extent which the lateral method does not admit of. Urinary infiltration he proposed to combat by means of suture of the bladder wound; and in order to prevent injury to the peritoneum he urged the adoption of distension of the rectum, together with distension of the bladder, by means of which the prevesical fold of the peritoneum is drawn or pushed upwards, leaving sufficient room above the pubis for operation, without fear of peritoneal injury. None of these recommendations are new, nor can Prof. Petersen claim priority for any one of these suggestions. Antiseptic surgery is the copyright of Sir Joseph Lister. Suture of the bladder in supra-pubic lithotomy was recommended as far back as 1581 by a French surgeon, Rousset, and was attempted by several surgeons previous to 1880; whilst the effect of rectal and vesical distension upon the prevesical fold of peritoneum was demonstrated by Dr. J. G. Garson, of Edinburgh, in a paper read before the German Congress in 1878, and from him, no doubt,

[a] Gross. System of Surgery. 1882. Vol. II., p. 759.
[b] British Med. Journal. March 20, 1869.
[c] Ueber Sectio-Alta. Archiv für Chirurgie. Langenbeck. 1880.

Prof. Petersen adopted the idea and put it to practical use. To Petersen undoubtedly is due the credit of combining together and of applying methods which have placed this operation upon the firm foundation which it occupies to-day.

Before discussing the various points which are raised by a consideration of this subject, I will shortly detail a case in which the modernised operation of supra-pubic lithotomy was adopted :—

Case.—H. M., a land steward, aged sixty-five, was sent up to me by Dr. David Jacob, of Maryborough, and was admitted into the Adelaide Hospital on May 3rd, 1887. He was suffering from vesical calculus. Dr. Jacob wrote to me to say that he had no difficulty in finding the stone, but considered that the case was not a suitable one for lithotrity. The sound, which he passed readily, caught the stone, "and apparently fairly indicated its size at 1 inch or $\frac{7}{8}$ inch" in diameter.

He was a tall, large, heavy man, who had enjoyed excellent health all his life until two years previously, when he noticed the urine to be of a dark, coffee colour. Frequent micturition soon followed. A year later he had great uneasiness when sitting up, and a burning pain in the urethra, shooting down to the end of the penis after passing water. At this time he frequently had to pass water every hour, and sometimes he could not prevent its escaping into his clothes. For the last three months, under Dr. Jacob's care, he had much improved. He had passed no blood since the 17th of March, 1887. Since then the pain after micturition had disappeared, and he was able to retain his urine for two or three hours. It had become quite clear.

The day after his admission to hospital the urine was examined. Its specific gravity was 1022; it was acid, and after standing a short time a dense, gelatinous, whitish precipitate appeared; it contained a small quantity of albumen, and the microscope revealed pus cells, together with many triple phosphate crystals.

On May 7th the patient was put under chloroform. An ordinary Thompson's sound was found too short to reach the bladder, and a very long one had to be used. The finger passed into the rectum discovered a very large smooth prostate, beyond which the finger could not reach. The sound struck a stone, as it was being withdrawn, with the curve turned upwards and the handle well depressed. The stone was evidently lodged behind the pubes, and was of a fairly large size. On account of the great depth of the perinæum, and believing that the supra-pubic operation would in such a case be a safer and better procedure than a lateral lithotomy, I put it in practice on May 10th, 1887.

As the patient was found to have a mitral systolic murmur, one-sixth of a grain of morphin was first given hypodermically, and then anæsthesia

was produced with chloroform, the effect being kept up with ether. The pubes was shaved, then scrubbed well with soap and water, and finally washed with corrosive sublimate solution (1 in 1,000). Thompson's rectal bag was then oiled, introduced into the rectum, and distended with 12 ozs. of water. A soft rubber catheter was passed into the bladder, and through it 8 ozs. of a 5 per cent. solution of boric acid was injected. The return of the fluid was prevented by tying another soft rubber catheter round the penis, without withdrawing the catheter which had been passed into the bladder. An oval tense tumour could be at once detected in the abdomen above the pubes. On account of the great quantity of adipose tissue covering the abdomen, the initial incision was made four inches long in the middle line. The fat was two inches thick. The linea alba and the fascia transversalis were divided *seriatim* to the whole extent of the original incision in the abdomen. The fold of the peritoneum was discovered at the upper part of the incision, but was nearly three inches above the pubes. There was a large quantity of pre-visceral fat, which was scraped through with a blunt knife, and the bladder exposed, which was not, however, fully distended. The bladder was hooked up on a tenaculum passed through its walls parallel to the line of incision, and an opening was made into the bladder large enough to admit a finger. Fluid at once poured out. A finger passed through the wound first came upon the rubber catheter and beneath it three hard calculi. The wound in the bladder was then enlarged to two inches, and, by means of a lithotomy scoop and a finger, the calculi were extracted one by one. The bladder itself seemed to be quite healthy. I therefore determined to attempt to get union by first intention by careful suture. Accordingly I introduced six or seven Lembert's sutures of catgut, passed through the external and muscular coats alone, the mucous coat being carefully inverted. I then put in a continuous suture, top-sewing the fibrous coat together, so as to completely cover in and hide the first row of sutures. Eight ounces of the boric acid solution were now injected into the bladder to distend it, but the suture was complete and there was no leak. A drainage tube was now placed in the wound, extending from the upper angle, so as to be as far as possible removed from a source of infection, and reaching down behind the pubes and beneath the fascia transversalis. This fascia, the linea alba, and the skin, were then sutured in successive layers. Iodoform was dusted over the wound, which was dressed with sal-alembroth gauze, covered with a wood-wool pad, and firmly bandaged. The rectal bag was removed, but the catheter was retained in the bladder, and the urine was conducted through an India-rubber tube to a vessel beneath the bed.

The subsequent history of the case may be epitomised. The temperature on the day following operation reached 101·2°, but on the fourth day it became absolutely normal and remained so throughout. On the fifth

day the catheter was removed, and directions were given that the urine should be drawn off every four hours. On the twelfth day the catheter was discontinued, as the patient was able to void urine naturally. As to the abdominal wound it healed in its entire length by first intention, except along the track of the drainage tube. This was not removed until the 19th of May—*i.e.*, the tenth day. I kept it in thus long on the chance of any urine leaking through the bladder wound, but this never occurred. The sinus left by the drainage tube closed rapidly as soon as the latter was withdrawn.

The patient was allowed up about the wards on the fourteenth day, but although perfectly well he was kept under observation until the 5th of June—that is, five weeks from the time he was admitted. He is still in perfect health.

The stones removed weigh respectively 237 grs., 214 grs., and 215 grs.; in all, 666 grs.—that is, $10\frac{3}{4}$ grs. more than $1\frac{1}{2}$ ozs. They measure respectively $1 \times 1\frac{7}{16}$ inches, $1\frac{3}{8} \times 1\frac{1}{4}$ inches, and $1\frac{3}{8} \times 1\frac{3}{16}$ inches.

It is interesting to observe the great similarity these calculi present in appearance, size, and weight.

In this case we have illustrated the three factors of success urged by Petersen—namely, antiseptic precautions, vesical suture, and double distension, both rectal and vesical. Of the first of these I need say nothing, as operating surgeons all over the world are practically agreed at present on their efficacy. Of suture of the bladder we are far from unanimity. Sir Henry Thompson does not employ it; in France it is rarely resorted to; in Germany we find some of its most ardent supporters and its bitterest opponents. It cannot be denied that suture of the bladder, when successful, attains the ideal in supra-pubic cystotomy. But the whole essence of the question lies in the reservation "when successful." Unfortunately, vesical suture has a long array of failures to contend with—failures, I mean, in the sense that the sutures have not succeeded in preventing the urine from flowing through the abdominal wound. But, on the other hand, suture of the bladder has been sufficiently often successful to encourage surgeons in attempting it. Of course, it is understood that I am dealing only with suture of that part of the bladder which is not covered with peritoneum.

Now let me shortly examine the objections which have been made to the immediate closure of the bladder by suture in supra-pubic cystotomy. Firstly, it has been stated by some, and most positively by so eminent a surgeon as Trendelenburg,[a] that it is

[a] Berliner klin. Wochenschrift. 1881. P. 1.

almost impossible to cite a single case in which the urine, either entirely or in part, has not in a short time made its way through the abdominal wound—in other words, that it is useless to attempt suture, because it always fails. Now, what are the facts? In a table published by Dr. Schmitz, of St. Petersburg, in 1886,[a] in which he had collected together all the cases of vesical suture known to him up to date, we find it had been attempted in 55 cases in which the result was known. Of these, 17 cases healed by first intention. The first case on record was that of Lotzbeck in 1858,[b] and which proved a complete success. The same operator scored the second success in 1859. The next two successful cases were by English surgeons, Sir Joseph Lister and Mr. Gamgee, both in 1873. Since the publication of Schmitz's statistics, I have found several cases which have been added. One by Pilcher,[c] of New York, in 1885, the patient a man twenty-one years of age, returning home perfectly well on the 11th day. One by Mr. Parker,[d] of the Children's Hospital, London, of a child aged three, who left hospital cured on the 16th day. Two cases by Zangarol, of Alexandria—one successful, the patient leaving hospital on the 7th day.[e] One by Sir Wm. MacCormac,[f] in a boy aged three and a half, in which recovery was complete in a week. And my own case, in which the patient was up and about on the 14th day.

In the face of Schmitz's table, which shows that complete success has been attained in 31 per cent., not counting the cases which have since been added, I think I am fully justified in saying that the success attained not only justifies but strongly encourages us in making the attempt. The next objection raised to vesical suture is of a more serious character—namely, that when the suture does not hold it leaves the patient in a worse condition than if the bladder-wound had been left open, and that the death-rate after suture is higher than the death-rate of supra-pubic cystotomy generally. Now, here again we must appeal to statistics. I have already referred to Dr. Dulles' table, in which he has collected 636 cases of the high operation, and the death-rate he has found to be 28·6 per cent. What is the death-rate when the bladder has been sutured? The most complete table, so far, is that of Schmitz,

[a] Langenbeck's Archiv. 1886. P. 457.
[b] Bruns. deutsche Klinik. No. 15.
[c] Lancet, Jan. 23, 1886.
[d] Lancet, July, 1886.
[e] Revue de Chirurgie. 1885. P. 258.
[f] Brit. Med. Jour., Oct. 2, 1886 P. 621.

of St. Petersburg. Of the 55 cases of vesical suture 8 died—that is, a percentage of 14·5, or very nearly one-half of the death-rate in supra-pubic cystotomy. Hence we see that this objection falls completely to the ground, and that suture of the bladder offers a better chance to the patient than when the wound is left open.

The third objection made to vesical suture is that it lengthens the operation and is difficult to perform, on account of the smallness of the field of operation, and the depth to which the bladder sinks when once it has been opened. This objection may have had force before distension of the rectum was introduced. But the pressure of the rectal bag throws the bladder forwards within easy reach of the operator's hands, and, moreover, affords a most valuable support behind it. It is obvious that the rectal bag should not be emptied until the suture is completed. In my own case I did not find the least difficulty in introducing a double row of sutures, and the time occupied in so doing did not prove to be of a deterrent length.

Lastly, Koenig[a] finds fault with suture of the bladder because it fails exactly in those cases in which its success would be most desirable—that is to say, in cases in which the urine is alkaline, fœtid, and swarming with septic organisms. Undoubtedly this is the case, and it is still an open question whether, under such circumstances, it would not be wiser to leave the wound open and to employ antiseptics freely. At the same time, it is not sometimes impossible, by appropriate treatment, to rectify this condition of the urine before the sectio-alta is resorted to.

We see then that suture of the urinary bladder in supra-pubic cystotomy has been successful in a certain proportion of cases, about 31 per cent., and we have reason to hope that as many of these were performed in the pre-antiseptic era, the next series of cases, under more strict antisepticism and more perfect methods of operating, will show a much larger percentage of successes. Still we are faced by the fact that up to the present about two cases out of every three have failed. What is the reason of this failure? Probably the chief cause is that we have to deal with the fibrous coat of the bladder and not with its peritoneal; and, just as it is easy to obtain immediate union between peritoneal surfaces opposed to one another, so is it difficult to obtain primary union when these surfaces form part of a fibrous envelope.

On account of this difficulty, Duchastelet[b] has proposed to open

[a] Centralblatt für Chirurgie, 1886.

[b] Revue de Chirurgie. 1883. P. 104.

deliberately the abdomen through the peritoneum, and to operate for large stones through the antero-superior surface of the bladder; and M. Villeneuve, Surgeon-in-Chief of the Hospitals at Marseilles, says, in speaking of this suggestion[a]:—"For my part. I am greatly disposed to follow him in this path, and I would even extend the field of this proposition by asking whether, with regard to the future and present progress of surgery, the bladder will not some day be always opened on its serous aspect, so as to replace friability by plasticity, and whether it is not in this direction that the definite solution of the problem will be found?"

But there are other causes, besides this anatomical one, which operate to prevent suture of the bladder being successful. It generally fails in cases where, by long distension, the bladder wall has become thinned or diseased. A putrid condition of the urine also militates against it. In these cases it is questionable whether the attempt should be made. But, even in cases where the urine is healthy and the bladder wall is unaltered, success may not be effected on account of the injured conditions of the edges of the bladder-wound, caused by the manipulations required to extract the stone. Hence it is of the utmost importance that the surgeon should pay particular attention to avoid any unnecessary bruising or tearing of the edges of the wound, if he wishes to attain the ideal of supra-pubic lithotomy—immediate union of the bladder-wound.

The advantages of *successful* suture of the bladder are almost too obvious to require even to be mentioned. It unquestionably hastens recovery. Ten days, on an average, has been estimated as the gain in time, but sometimes the gain is considerably more. Moreover, it effectually prevents the possibility of urinary infiltration. But, even when it fails to permanently close the bladder, the sutures, if applied properly, will hold at least for three days, as pointed out by Ultzmann, and by that time the raw surfaces in the abdominal wound will be more or less protected by adhesive inflammation, so that the dangers of urinary infiltration will be considerably diminished. Hence I would suggest that the drainage tube placed in the parietal wound outside the bladder should not be removed, as is usually the case in aseptic operations, at the end of the first 24 or 48 hours, but that it should be retained at least for a week, until all fear of the bladder-wound opening up should have passed away.

[a] Ibid. P. 685.

One of the great dangers of all operations on the bladder is urinary infiltration. It is not the special property of supra-pubic lithotomy, nor is the occurrence of it a frequent result of this high operation. In a paper published, by Dr. Dulles, in the *American Journal of Medical Science* in 1878, he states that he has been able to find only seven cases of urinary infiltration in 478 cases collected. Souberbielle met with it only once in thirty-nine operations. Hence we cannot look upon it as a frequent danger in any sense in the supra-pubic method. Still all necessary precautions should be taken to prevent it. In cases where the bladder is not sutured, but where it is left open or partially closed and drained through the abdominal wound, it will be better to adopt the plan recommended by Sir Henry Thompson, of dressing the wound lightly, rather than to plug it and to bind it up. The former gives free egress to the urine, the latter will force the urine into the cellular tissue outside the bladder. The plan adopted by Trendelenburg, and some others, of keeping the patient constantly lying on the abdomen, seems an unnecessarily harsh proceeding, and one not very likely to be followed generally.

I have not thought it necessary to enter at length into the question of the relative value of vesical distension alone, or of supplementing it by distension of the rectum. Mr. Barwell, at the meeting of the Medico-Chirurgical Society of London, in March, 1886,[a] attempted, by some experiments, to show that the elevation of the anterior vesical fold of peritoneum was entirely due to the bladder distension, and that the rectal bag had no appreciable effect upon it. But, in presence of Dr. Garson's paper, published in 1878, in which he detailed the experiments he made to prove the influence of the combined distension, and of Fehleisen's paper in the *Archiv für Chirurgie* for 1885, and, more recently still, of Sir William MacCormac's article in the *British Medical Journal*,[b] which entirely corroborate Dr. Garson's statements, I think Mr. Barwell will find it difficult to draw converts over to his side.

His views shortly put are these—that the elevation of the pre-vesical fold of peritoneum is entirely due to the bladder distension, for, if the rectum be *alone* distended, the position of this fold is unaffected. So far his contention would seem unassailable, but, when he goes on to assert that with a bladder distended with fluid the position of this fold of peritoneum is scarcely at all affected by

[a] Transactions. 1886. P. 341.

[b] March, 1887.

Fig. 1.

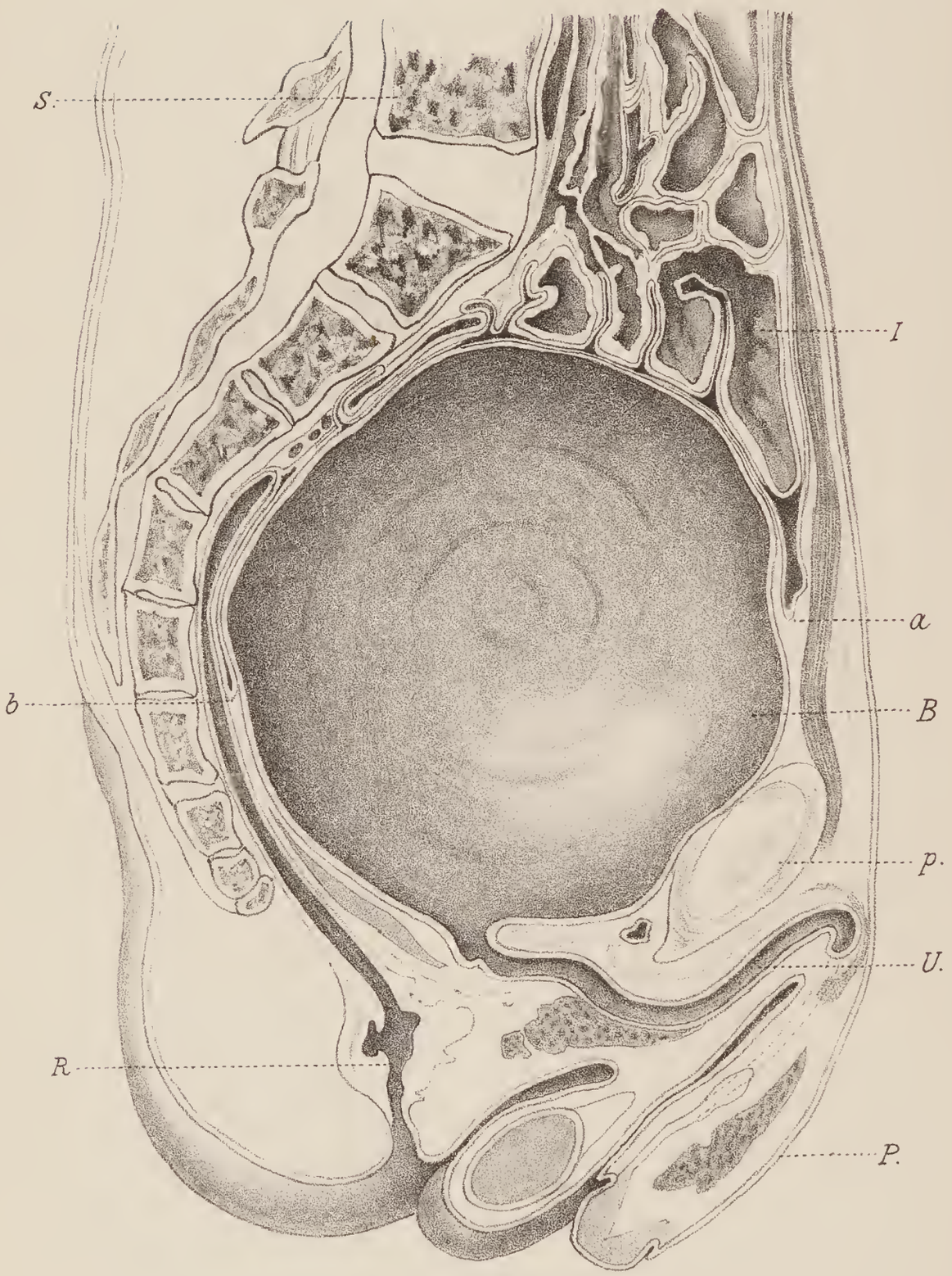

Fig. 1 represents the effect of distension of the bladder alone upon the prevesical reflection of the peritoneum (after Fehleisen).

B—Bladder distended with 630 cc. of water.
R—Rectum, undistended.
S—Spinal vertebræ.
I—Intestines.
p—Pubes.
P—Penis.
U—Urethra.
a—Prevesical reflection, 2 cm. (about $\frac{3}{4}$ inch) distant from pubes.
b—Recto-vesical reflection of peritoneum

F. Huth, Lith^r Edin^r

Fig. 2.

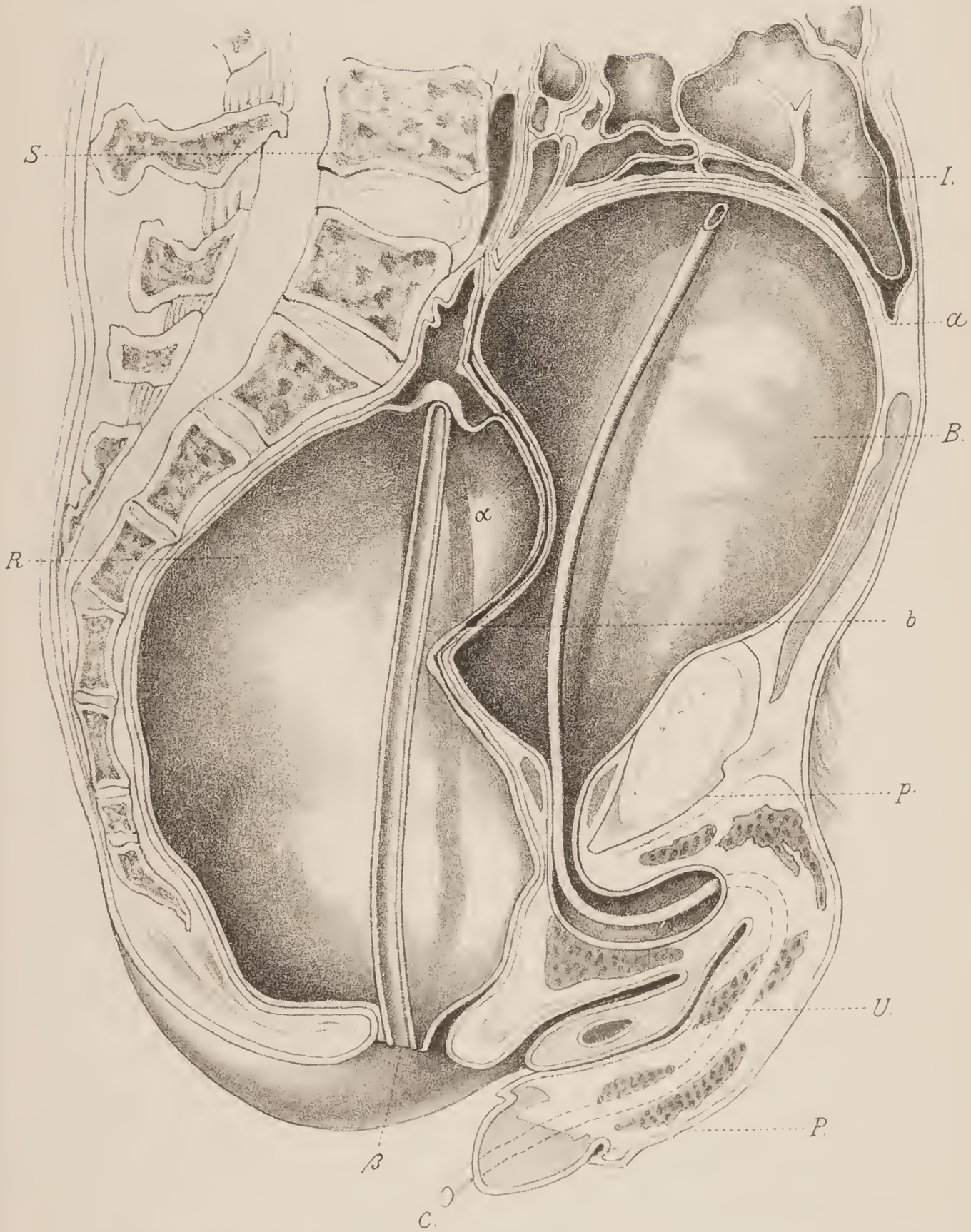

Fig. 2 represents the effect of distension of both bladder and rectum upon the prevesical fold of peritoneum.

B—Bladder distended with 420 cc. of water.
R—Rectum distended, by means of Petersen's bag, with 500 cc. of water.
S—Spine.
I—Intestines.
p—Pubes.
P—Penis.
U—Urethra.
C—Catheter in bladder.
a—Prevesical fold, raised 8½ cm., about 3¼ inches.
b—Recto-vesical fold.

F Huth, Lith^r Edin^r

subsequent rectal distension, his experiments are directly opposed to those of the authorities I have quoted. An examination of the plates (Fig. 1 & 2) taken from drawings made by Fehleisen from frozen sections, the result of vesical distension alone and of the double distension are at once apparent. The effect of filling the rectum with fluid is to flatten the bladder antero-posteriorly, and thus by shortening its antero-posterior diameter to increase its diameter from above downwards.

In Fig. 1 the bladder has been distended with 630 cubic centimetres (about 22½ ounces) of fluid, whilst the rectum is empty. The prevesical fold has risen so as to leave a clear space of two centimetres (about ⅘ inch) between it and the pubes. In Fig. 2 the bladder has been distended with 420 cubic centimetres (about 14½ ounces) of fluid, and the rectal bag contains 500 cubic centimetres (about 17½ ounces) of water. In this case the anterior fold of peritoneum is 8½ centimetres (3⅓ inches) distant from the pubes—that is to say, there has been a gain of about 2½ inches in the space for operative purposes.

But, independently altogether of the effect upon the fold of peritoneum in front of the bladder of introducing an elastic bag into the rectum and then distending it with water, this procedure affords some great and incontrovertible advantages. It forces the bladder forwards. It approximates the posterior to the anterior wall of the bladder, and thus brings the whole of the bladder not only within reach of but within sight of the surgeon, and, finally, it affords a firm support behind to the bladder; and these are advantages which the operator will appreciate in removing vesical tumours or extracting calculi or foreign bodies.

The operation of supra-pubic cystotomy in its modern development is still too recent for surgeons to agree as to the limits of its applicability. There are certain classes of cases upon which all operators are practically agreed that this method is the safest and best. Dr. Dennis, of New York,[a] thus formulates the cases in which exploration of the bladder by the supra-pubic method is indicated—1. In cases of lithotomy for large hard calculi; also when lithotomy is required in a patient suffering from paraplegia, a contracted pelvis, perinæal tumours, encysted calculi, ankylosis of the hip, hæmorrhoids or great obesity. 2. For the removal of certain foreign bodies, as hairpins, bodkin needles, &c., for the

[a] American Surgical Association, 1887; and Annals of Surgery. Vol. VI. 1887. P. 261.

treatment of chronic cystitis, and for the removal of calculi in the female. 3. In lithotomy occurring in a patient with greatly enlarged prostate, or with fibroma of the prostate, or in calculi lying in diverticula behind the prostate. 4. For excision of tumours of the bladder. 5. For rupture of the bladder.

The above list illustrates well the class of cases in which surgeons are practically agreed that the supra-pubic operation is called for. I believe, however, that as it becomes better known it will gradually be extended to a much larger field. In an earlier part of this paper I stated that the modifications which had been recently introduced into the *modus operandi* had given it a stimulus which threatened to extinguish the lateral method. This may not be the case with surgeons of large experience in operating for stone, but with the vast majority of operators I believe this will be the result. This method is only now fighting its way, but so far it has fought its way well. The grounds on which I base this opinion are—First, that the operation is an easy one, much easier for the general run of operating surgeons to perform than the lateral operation, or even than litholapaxy. 2ndly. The freedom from hæmorrhage, there being no named vessels in the line of incision to deter the operator; whilst in the lateral method the danger from hæmorrhage must always be present to the surgeon's mind. 3rdly. There is no risk of wounding the genital apparatus in boys—a risk which has often been urged in the lateral operation. 4thly. The high operation is specially indicated in females, on account of the frequency with which a vesico-vaginal fistula follows the usual methods of removing calculi or foreign bodies from the bladders of women and girls; and the supra-pubic method also prevents the occurrence of incontinence of urine, especially in aged women. 5thly. This operation admits of a more perfect adaptation of the principles of asepticism than any other, and consequently of a great reduction in the septic danger which may result from operations for stone. 6thly. It diminishes the chances of a re-formation of stone, consequent upon the retention of particles within the bladder, as sometimes follows on lithotrity. Lastly, the operation promises to be eminently a safe one. In the earlier part of this paper I referred to Dr. Dulles' table of statistics of 636 collected cases, dating back to the earliest times, in which the bladder had been opened above the pubes. This table gives a mortality of 28·6 per cent. But this table refers to the old method of operating. Dr. Dennis, of New York, has collected

127 cases performed since 1879, with a mortality of 9 per cent.; and these deaths were chiefly due to septic infection—an avoidable cause in these days. But the latest record is by Dr. Edmund Assendelft, of Wetoschkino, in Russia,[a] who publishes 102 cases in which he has performed supra-pubic lithotomy, with two deaths. But one of these deaths was in a boy, aged four, who died of general marasmus, follicular ulceration of the intestines, and bronchitis—conditions in no way due to the operation; so that the mortality is about 1 per cent.

When other operators are able to show that this is a more accurate estimate of the modern sectio-alta—and I believe they will—we shall find the high operation more generally adopted for even small stones than it is at present, and the lateral operation in an equal degree abandoned. Sir Henry Thompson, in his monograph, thus concludes:[b]—"So safe and so simple, indeed, is the supra-pubic operation here described, that I will reiterate in this place before concluding, and with increased emphasis, an opinion incidentally mentioned at the outset. I believe that a surgeon who is not practically familiar with lithotrity, on meeting with a hard calculus, which is found on trial not to be readily seized with a lithotrite, will be more likely to achieve a lasting success for his patient by adopting the cutting in preference to the crushing operation."

ART. XXII.—*Note on the Relief of Migranous Headache.*[c] By JAMES LITTLE, M.D.; President of the King and Queen's College of Physicians in Ireland; Physician to the Adelaide Hospital.

THOUGH the typical form of migraine—consisting of the visual disturbance, hemicrania, and nausea—is not a very common affection, we frequently meet with persons suffering from headaches, which seriously interfere with the occupations and comfort of life, and which appear to me to be of the same nature as the special neuralgia to which the term migraine is applied. These headaches occur at various intervals, sometimes only three or four times in

[a] Archiv. für klinische Chirurgie. 1888. P. 525.

[b] The Supra-pubic Operation of Opening the Bladder. Sir Henry Thompson. 1886. P. 43.

[c] Read before the Section of Medicine in the Royal Academy of Medicine in Ireland, Friday, April 20, 1888. [For the discussion on this paper see page 539.]

the year, sometimes two or three times in a week. It is usually described as a dull disabling headache, and is first felt on awaking, or immediately after getting up. Generally those who suffer from it say that they go to bed the previous night feeling particularly well, but occasionally they have a warning of the approach of the attack on the previous afternoon. Sometimes the headache goes away after breakfast, but far more frequently the sufferer is unable to take breakfast, or finds that whether he can take it or not the headache increases. During the day he has distressing fits of retching, but usually is able to sleep when night comes, and the following morning he awakes merely weak. In a certain proportion of cases the headache is at first limited to one brow; and in these the invalid is less fortunate, for he generally finds that on awaking on the second day the pain has not gone, but has merely crossed over to the previously unaffected side of the head. The diagnosis of the nature of these attacks is very important. Those who suffer from them generally regard them as due to derangement of the digestive organs, and some of their advisers take the same view, and endeavour to avert the attacks by rigid care in diet, and by medicines which act on the liver and digestive organs. Such measures are, I think, very seldom of advantage, not infrequently rather the reverse; and in speaking of these headaches as being allied to migraine, I mean to convey the idea that they are really neuralgic, and are to be postponed and relieved when they come by treatment directed to the nervous system.

Of the means which are useful in lessening the frequency of these headaches, the most efficacious are, I think, abundant exercise in the open air, a nourishing diet, sponging with hot water in the morning, followed by the cold douche over the shoulders and spine, and a very sparing use of tea; and among drugs the combination which has appeared to me to do most good is a pill containing one-twelfth of a grain of arseniate of sodium, one-sixth of a grain of extract of Indian hemp, one-third of a grain of extract of belladonna, and two grains of valerianate of zinc, taken after breakfast and dinner.

Up to October, 1885, I did not know of any treatment which had any distinct power of cutting short the attack when it came, or even mitigating its severity. Most patients found that if they refrained entirely from any attempt to take food, and were able to lie in a darkened room, they did all which was possible to lessen the intensity of their sufferings. Those who had on the previous

evening a warning of their impending attack sometimes thought they kept it off by a full dose of bromide taken at bed hour. Others found that a dessertspoonful of the granular citrate of caffein was beneficial, while some told me that lemon juice or vinegar relieved the sickness and headache; but at this time it occurred to me to try salicylate of sodium, and after more than two years experience of its strikingly beneficial effect, I feel justified in commending it to the members of the Medical Section. I am in the habit of directing the patient, when he awakes with any feeling of headache, to take twenty grains of the salicylate in a wineglassful of water, made effervescent by the addition of a dessertspoonful of the granular citrate of caffein, and if necessary to take a second or even a third dose at intervals of two hours. The effervescing caffein makes the dose a very palatable one, which the salicylate alone is not, and probably renders it more useful; but that the good effect is not due to the caffein is proved by the fact that I have seen it relieve persons who had previously used the caffein alone without benefit. It does not, as far as I know, lose its effect, as a patient of mine, to whom I gave it more than two years ago, tells me that she finds it as valuable as when she first began its use. One lady informed me that she doubted the advantage of keeping off the attack, as she found that it did come at last, and was then far more severe than ever. This, however, has been in my experience a solitary instance of the storing up of the nerve storm—a phenomenon which has been from time to time observed when epileptic seizures were postponed by the administration of the bromides, and its occasional occurrence does not lessen the propriety of keeping off the headaches when we can.

Case I.—On November 25th, 1885, Miss H., aged thirty, consulted me for attacks of pain in the left eye, and around, and to the outer side of, the eye. The pain was always felt on first awaking, and was accompanied by general headache and by nausea. She had pain in the region of the sigmoid flexure, and very confined bowels, and she had noticed that if she neglected taking aperient medicine the attacks were more severe. She also suffered from coldness of the hands and feet, but was otherwise in good health.

I prescribed the pills to which I have already alluded, an aperient, consisting of equal parts of the liquid extract of cascara and syrup of ginger and the salicylate of sodium and caffein. I never saw the lady again, as she does not live in Ireland; but six months afterwards her mother consulted me, and told me that the salicylate and caffein had proved quite effective for cutting short the attacks.

Case II.—On March 20th, 1886, Mrs. M. consulted me. She had suffered from headaches for about ten years; up to December, 1885, they had occurred about once every three weeks. Since that date, she had had one nearly every week, and they had been much more severe. She slept well; but, on awaking, felt shooting pains in the back of the head and tightness across the forehead, which ended in dull, heavy pain all through the head, often accompanied with feeling of pins and needles in the right hand. She also suffered from feelings of distension after meals, an unpleasant taste in the mouth, and confined bowels. She had already tried the granular caffein, and had found it sometimes useful. I advised her to dine early and take more exercise, to keep her bowels open by a pill of calomel, aloes, and asafœtida, which had many years before been ordered for her by Sir Dominic Corrigan, to take hydrochloric acid after dinner, and the salicylate and caffein when she awoke with headache.

More than a year afterwards, I heard from her that she had found the salicylate and caffein most effectual in keeping off her attacks.

Case III.—Last summer a married lady, aged fifty-eight, sought my advice on account of headaches, which had begun eight years previously, two years after the cessation of menstruation. At first she had the headache every three or four weeks; but of late the intervals had been only ten or twelve days. The evening preceding the attack she feels drowsy, and during the night often has nightmare. She awakes about five o'clock with throbbing pain in the vertex, and retching almost immediately begins, and continues violently and convulsively during the day, so that she cannot leave her bed—the pain in the vertex continuing all the time. About eight o'clock in the evening her sufferings begin to abate, and next morning she is as well as usual. Much pale urine is passed during the attack; her appetite is always poor; she eats little butcher's meat; and has confined bowels. She suffers almost every night, more or less, from nightmare, and is constitutionally anxious and easily worried. This lady had consulted a London physician, who deservedly has a great reputation for his knowledge of maladies of this nature, without benefit, and had been long under the care of one of the most skilful Dublin physicians, at whose suggestion I saw her. I advised her to take pills of bromide of zinc and Indian hemp twice daily, and to use the salicylate and caffein when the attack began. The pills had no effect in keeping off the attacks; but the salicylate and caffein proved quite effectual in cutting short each attack, and had not lost their power after nine months.

I do not think it necessary to trouble the Section with further details of cases. The combination which it is the object of this paper to commend has, I know, been tried by some of my medical friends to whom I have mentioned it, and I hope others will try it and will find it as generally satisfactory as I have done.

ART. XXIII.—*Note on the Power of Saccharin in Preventing Ammoniacal Change in Urine in Chronic Cystitis.* By JAMES LITTLE, M.D.; President of the King and Queen's College of Physicians in Ireland; Physician to the Adelaide Hospital.[a]

THE management of cases of chronic cystitis has been greatly improved of late years, and as a consequence its power of inducing secondary changes in the kidneys, and so destroying life, has been greatly lessened. Of these improvements I think the first place is due to the manufacture of catheters which can be easily used by the patient himself without risk, by which means the accumulation of residual urine in the bladder is prevented. At the same time, medical men have become impressed with the necessity of urging scrupulous cleanliness in the instruments introduced into the bladder—a precaution which, a few years ago, was certainly neglected. As a consequence of the introduction of catheters which can be passed without pain or violence, I believe much relief has been given, and ammoniacal changes in the urine prevented by washing out the bladder with warm water, or antiseptic solutions; but it has always appeared to me, perhaps because I am a physician and not a surgeon, that it is better, if we can, to keep the urine free from decomposition by medicines given by the mouth, and so reduce instrumental interference to a minimum, and this practice I have always followed, especially in the case of aged persons who have come into my hands, and in whom chronic cystitis constituted part of their sufferings. Unfortunately, such patients have not infrequently irritable stomachs, as well as irritable bladders; and most of the drugs which are useful in keeping the urine sweet are liable to disagree and cause sickness. This certainly applies to the remedies which were chiefly used a few years ago—quinine, tincture of perchloride of iron, benzoic acid, and benzoate of sodium. Boric acid, which has been more used of late, is not so likely to sicken, and is, I think, best given in lemonade.

For the past three years I have been asked, from time to time, to see a lady, nearly eighty years of age, who is quite confined to bed in consequence of chronic disease of the bladder, which gives rise to frequent and painful calls to pass water. The urine always threw down a copious purulent sediment, and, except when decom-

[a] Read before the Section of Medicine of the Royal Academy of Medicine in Ireland, Friday, April 20, 1888. [For the Discussion on this paper see page 542.]

position was prevented by treatment, was always ammoniacal. The lady has many times passed, with great suffering, phosphatic calculi, and, I have no doubt, many such exist in the bladder, but she has always refused to permit any surgical interference beyond the occasional introduction of a soft catheter, and the washing out of the bladder by a lady who acts as her nurse. Quinine and boric acid, when taken in fair doses, always purified the urine; but about three months ago her stomach became so irritable that these drugs could not be borne, and the washing out of the bladder by a weak warm sublimate solution could no longer be practised, as the passage of the catheter had become exquisitely painful. The consequence was that the urine became so offensive that the odour met one on the stairs, and the patient's attendants had often to leave the room to avoid being sick. In this difficulty it occurred to me to try saccharin. I directed six of the tabloids to be used daily. In three or four days the urine was no longer offensive. The patient has continued their use ever since, and the urine has not again become ammoniacal, though there is little, if any, diminution in the quantity of contained pus.

Since the foregoing case came under my observation, I have had four other opportunities of observing the effect of saccharin in patients who were passing ammoniacal urine. They were all males; one a case of catarrh of the bladder, in a paraplegic gentleman; one a case of chronic cystitis, with enlarged prostate; and two cases, in which there had existed stricture of the urethra, but in which, although a surgeon had successfully dilated the stricture, the urine remained ammoniacal. In all these cases the saccharin was distinctly useful, but in all its administration had been combined with the daily use, by the patient himself, of a catheter, so as to prevent the accumulation of residual urine in the bladder—a precaution without which no drug will, I think, prevent decomposition of the urine.

ART. XXIV.—*Note on the Classification of Skin Diseases, with a Case of Pemphigus Foliaceus, treated by Ichthyol.* By G. E. J. GREENE, L.K.Q.C.P., &c.; Medical Officer, Ferns District, and late Admiralty Surgeon, Kilmore, Co. Wexford.

PEMPHIGUS, in common with herpes, has been defined as a vesicular or bullous affection, and is regarded not infrequently as the fully-developed stage of herpes iris or other forms of generally-developed herpes (Bristowe).[a]

Balmanno Squire, under the head of Bullæ, thus describes it:—"Pemphigus is a disease characterised by the development of a greater or less number of clear, watery, prominent blebs on inflamed surfaces. These little bladders being readily ruptured, give rise at first to excoriations and afterwards by the concretion of their liquid contents to thin crusts."

The disease is not regarded by Senator as a primary affection of the skin, but is classed by him with the exanthemata.

Some authorities, however, regard pemphigus as merely a variety of ecthyma, whilst others, again, consider it to be but a modification of impetigo.

It is an exceedingly difficult, and I might almost say hopeless, task for the student of medicine or young practitioner to obtain a comprehensive and reliable knowledge of pathological dermatology, having nothing better for his guidance than the ably-written and no doubt classic, but nevertheless confusing and contradictory, works of the period to consult.

The principal cause of this indefinite multiplication of classes, divisions, and varieties, seems to me to arise from the fact of many writers giving graphic and lengthy descriptions of diseases they have hardly ever seen, or perhaps observed casually once or twice. It may be, also, that having seen such diseases at different stages of development in different people, authors have assumed that they were separate affections—a fact not to be wondered at, considering the many and varying phases which a skin disease assumes when modified by constitution, situation, climate, medicine administered, and local applications, &c.; and, I may add, the merging with, and morphological alteration of, one disease by another.

That being so, would it not be advisable to try and reduce our nomenclature within more practical bounds? I do not, however, know of any other method by which such a confused dermatological

[a] Deutsche med. Wochenschrift.

nosology could be amended and placed on a rational and satisfactory basis than by the institution of an international collective inquiry committee, who would, after due clinical investigation and thorough literary research, decide upon and draw up a reliable and orthodox nomenclature, which would be thoroughly purged of far-fetched epithets and freed from the fanciful theories of embryonic, though aspiring dermatologists.

My reason for writing thus is not that I am desirous of lowering in public estimation the men of undoubted ability whose names I have casually mentioned, but rather to clearly demonstrate the urgent need of some reform in the classification of these important diseases, and thereby avoid the chaos produced in the mind of the beginner by a perusal of the heterogeneous descriptions found in our text-books.

But till such a reform is *un fait accompli*, we must needs content ourselves in describing the clinical features of our cases under whatever *soubriquet* in current medical literature best conveys an idea of the actual state of affairs.

In giving the history and objective symptoms of the following case, I have adopted this method, as far as possible :—

Case.—J. H., male, aged twenty-four, strong and plethoric ; previous history good; was never a day ill before; never had syphilis; family history good.

History of Present Attack.—Complained of vague muscular pains, and had slight rigor on March 8th, 1888. After a severe wetting on previous day, went to bed and felt all right next day, but on the 10th he noticed a few small pimples (as he called them) in left groin, and towards evening they were noticeable in the same situation on opposite side. The following day they had declined somewhat, but others presented themselves on the abdomen. On the 14th the back of the neck became the seat of a similar eruption. Becoming alarmed he then consulted a neighbouring apothecary, who gave him an ointment and eight-ounce mixture, telling him he was suffering from itch and would be all right shortly. After five weeks, as he was getting progressively worse, I was summoned to attend him on the 12th of April, when he presented the following appearance :—The face and neck were covered with thin reddish-gray, scaly crusts, having occasional fissures about a line in depth, exuding a clear watery fluid visible between them ; the chest was thickly studded with, in some places, discrete vesicles, in others bullæ ; whilst in several regions the bullæ were so closely packed that they had coalesced, and, quickly rupturing, left little lamellar crusts, which were of a light or whitish-brown colour, some of them being partially detached with the

ends curled up, leaving glimpses of (deep pinkish) skin visible, and in this respect somewhat resembling the quilling which the bark undergoes on some trees in spring. The feet and hands reminded me of the gloved and socked desquamation one often sees in the agricultural labourer after scarlatina; but, in addition, fissures varying from a line to a quarter of an inch in depth, exuding sanious, malodorous pus, existed between the toes, and even on the flexor surface and dorsum of the hands. He perspired freely, and this had a very strong mousy odour. Tongue moderately clean, pulse and temperature normal, appetite good.

Ordered—Ung. simplex to be applied twice daily, the loose skin to be clipped away, and to take 10 minims of ichthyol ammon. three times daily in simple syrup between meals, with a bland and unstimulating diet. Saw him again April 16th. Skin affection much better, but has not slept well, and complains of disinclination for food; told him to take three 5 gr. tabloids of urethan (Burroughs and Wellcome) at bedtime.

April 20th.—Expresses himself as vastly better; sleeps well, but has to force himself to eat. Called to see him on the 24th, and found that, with the exception of the feet, he was quite cured; stopped ichthyol, and gave a mixture containing liq. arsenicalis and ferri et am. cit.

April 30th.—Appetite quite recovered, but feet still tender.

Observations.—1. The foregoing might have been more accurately defined eczematous pemphigus of neurotic origin, as the symptoms partook of the nature of both eczema and pemphigus, more particularly the latter.

2. One of my reasons for publishing this case is that I am not aware of this new telluric product, ichthyol, having been used in a similar instance.

3. It is not generally known that ichthyol has a most disagreeable smell, and very frequently produces marked anorexia when given internally.

DISLOCATION OF THE SCAPULA.

Dr. Thomas, of the Hôtel Dieu, Beziers, reports a case of forcible dislocation of the left scapula. The patient, a healthy young man, sixteen years of age, had his left arm caught by the wheels of a steam engine, and, before he could be released, the shoulder-joint was torn open, and the coracoid process was pulled forward through the flesh, the ligamentous attachments between it and the clavicle having been torn through. Death occurred on the fourth day. No autopsy was allowed.—*Montpellier Médical*, June, 1887.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Diseases of the Bones: their Pathology, Diagnosis, and Treatment. By Thomas Jones, F.R.C.S. Eng.; B.S. London; Surgeon to the Manchester Royal Infirmary; Lecturer on Practical Surgery in the Owens College, Victoria University; Consulting Surgeon to the Children's Hospital, Pendlebury, Manchester. With Illustrations. London. 1887.

Mr. Jones' book will be read with great advantage by students and practitioners, to whom it is offered "as an exposition of our present knowledge of the important diseases of the osseous system." Its size is convenient and its illustrations the best to be found in any book of the size.

We would direct special attention to the etchings, which are by Mr. W. Tomlinson, for these are, in our opinion, superior to the chromo-lithographs and to the woodcuts introduced into the text.

More than one-half the book is occupied with a study of inflammatory disease of bone, which is most instructive. Each variety of the disease is fully and well described, with illustrative cases, and, as we have already said, admirable illustrations. The theory of a bacterial origin of osteomyelitis is set before the reader very clearly, and one feels almost a relief in reading the author's conclusion, as tending to the view that in this instance we may put aside the influence of the microbe invasion. He says:—

> "At present, however, the state of our knowledge hardly warrants us in saying that the microbes discovered in acute bone inflammations are specific germs, for organisms most closely resembling them are found in other diseases besides osteomyelitis."

In noticing the many merits of the book, we must also direct attention to some of its omissions. Although the author, in treating of the diagnosis of acute osteomyelitis, expresses "the great difficulty in giving a definite opinion with regard to the nature of

an acute bone affection, and in saying whether the disease is simply periosteal, or whether the interior of the bone is affected at the same time," he gives us little help in solving the difficulty—in fact, he declines to prophesy until after the event:—

"The subsequent course of the disease will give valuable information on this point. If the acute symptoms subside after the pus has been evacuated, and the patient begins to improve, the chances are greatly of a primary periosteal disease, with or without superficial necrosis. If, on the contrary, the improvement is only very temporary, the fever and the other symptoms again appearing, we are in presence of a much more formidable affection."

It is evident from this passage that the author attaches but little value to the sign so much relied on by Chassaignac in establishing the diagnosis in the early stage of the disease:—"The circumstance of a hard and painful œdema, which stops all of a sudden and by an abrupt line as one traces it up the limb, is a character pathognomonic of osteomyelitis." So says Chassaignac, to whom we owe the very name of the disease; it is, therefore, strange that the author omits it from his study of the diagnosis.

Again, writing in the next sentence, the author says:—

"At the onset the constitutional disturbance attending acute osteomyelitis is not unfrequently confounded with the premonitory symptoms of the eruptive fevers, more especially typhoid; the extreme tenderness on pressure should usually prevent this mistake being made."

But he makes no mention of the occurrence in acute periostitis of roseolar or scarlatiniform eruption occurring as an attendant of the disease, and calculated to lead aside the judgment of the practitioner in the early days of its treatment. We have seen patients admitted to hospital as suffering from scarlatina, and relegated to the physicians, even though in this city, fifty-five years ago, Ephraim M'Dowell published his "Observations on Periostitis," which contained the observation of this development of cutaneous eruption in the disease. An error of this kind delays relief and vastly extends the risks of the development of pyæmia by delaying surgical interference. The absence of any throat affection in a patient suffering from high fever and scarlatina-like eruption makes the skilled physician look for the true cause, but all will admit that there may be risk of delay before such search is made.

Of the later additions to the list of bone inflammations, the

so-named osteitis deformans, we look in vain for any new light from the author. He simply quotes the records of the few cases reported without comment or criticism. We think, in the first place, he might have done good service here had he raised his voice against the misleading term, osteitis deformans. Does it not seem strange that all who have written on this condition, of which the pathology is so doubtful, are content to accept not only the theory of Paget as to the disease being inflammatory, but, further, the unquestionably misleading term "deformans?" Surely other bone inflammations deform the bones and their owners vastly more frequently than this rare affection. We find not a word as to the frequent association of the affection with cancerous disease, although a great number of the earlier cases showed this association.

Whatever be the pathology of the affection, the name adopted is misleading, so much so that now-a-days one can hardly come across a patient, with a shin bone curved by undoubted inflammation, but the term "osteitis deformans of Paget" is tacked to it with all the satisfaction that attaches to a high-sounding name. But, whatever we may say, the name is likely to last, right or wrong, in part or in entirety. A good illustration of the fact is seen in every book on bone disease, including this before us:—"Rickets, syn. Rachitis." This barbarous term, rachitis, deliberately introduced by Glisson as implying that disease of the spine was a principal element of the disease, while it imitated the English original, has lasted over two hundred years, and has invaded all languages. "*Est enim spina dorsi inter partes primo hoc morbo affectas princeps.*"

On such grounds he must need invent a word which goes further and labels the disease an inflammation of the spine. Certainly he was right who said—"Give a lie twenty four hours' start and it will beat the truth for ever." Our author makes a curious use of the synonym, as follows:—

"A predisposition to *rickets* is no doubt inherited. This is shown in many ways: the disease may be directly transmitted from parent to child, or again, several members of the same family may suffer from *rachitis*, although the conditions which usually produce the disease are absent. Feeble digestion and imperfect assimilation, fruitful sources of *rickets*, are unquestionably hereditary; and the child of a tubercular, syphilitic, or otherwise enfeebled parent is more likely to *become rachitic* than those of healthy and robust ancestry."

It is clear that whatever be the meaning of the term rickets, it

was the name applied to the disease when Glisson proceeded under royal directions to study it, and to him we owe the ignorant and barbarous term rachitis. To the student early in his studies it conveys, if he have any appreciation of the meaning of the terms he is taught, the erroneous idea that the disease is an inflammation of the spine. It is hard to displace first impressions, and we think our author and all modern writers would do well in dropping the title, no matter how venerable it may be by age, and use good old English in its place.

In the arrangement of his work the author has separated the varieties of osteomalacia, and has described in different relations the various forms of fragility of bones. This we think a fault, for the student will much more readily comprehend the subject if the several diseases are studied together, and their characters are directly contrasted. But, perhaps, we are spending too much of our space in finding faults in a book which we desire to praise for sterling merit. One can always find fault, and we must not spoil our praise with overmuch adverse criticism.

The chapters on tumours of bone which form the latter part of the book are clear and good, and, like those on inflammatory disease, are well and fully illustrated.

Watts' Dictionary of Chemistry. Revised and entirely re-written by H. FORSTER MORLEY, M.A., D.Sc., Fellow of, and late Assistant Professor of Chemistry in, University College, London; and M. M. PATTISON MUIR, M.A., Fellow, and Prælector in Chemistry, of Gonville and Caius College, Cambridge; assisted by eminent Contributors. In Four Volumes. Vol. I. London: Longmans, Green, & Co. 1888. 8vo. Pp. 752.

THE first volume of the splendid work so well known as "Watts' Dictionary of Chemistry" was published a quarter of a century ago, and subsequent volumes appeared at intervals during the succeeding eighteen years—including a number of "Supplements." It might, therefore, be supposed that no need would arise for the revision of so complete and modern a work for many years to come. But chemistry is so progressive a science, and its progress is so magical—taking place by leaps and bounds—that all such surmises have been long since falsified, the talented author himself having been among the first to admit the necessity for a new edition.

The intention is that the work shall appear in four volumes,

each containing about 750 pages; but in order to carry this into effect, the authors of the new "Watts' Dictionary of Chemistry" have been obliged to adopt a very condensed style, including a free use of abbreviations and formulæ in order to save space.

Yet the present edition has good claims to its title, for at the time of his lamented death the late Mr. Henry Watts, B.A., F.R.S., had prepared "Instructions to Contributors," and had written sixty-three pages for the first volume, including many special articles, and the first part of that on "Alcohols."

The original work was entitled "A Dictionary of Chemistry and the Allied Branches of other Sciences"—the present work is restricted to chemistry alone. Technical chemistry will be treated in a companion volume, to be published under the editorship of Professor T. E. Thorpe, Ph.D., F.R.S., Professor of Chemistry at the Royal School of Mines, who, by the way, contributes an exhaustive article on the "Atmosphere" to the volume before us (pages 327–336, inclusive).

The authors have arranged to supplement the descriptions of chemical bodies, which are given in alphabetical order, by short general articles on classes of elements and compounds, such as *Alkali Metals*, *Carbon Group of Elements*, *Oxides*, *Hydroxides*, *Hydrates*, and *Amines;* as well as by articles on important theories, hypotheses, and principles.

The editors have divided between them the responsibilities of their undertaking—one, Mr. Pattison Muir, devoting himself to the portion of the work which deals with inorganic chemistry; the other, Dr. Forster Morley, to the articles relating to organic chemistry. Each editor contributes to his special part an introduction, in which are given the necessary explanations of the plan on which the Dictionary is being written. A list of special contributors follows these "Introductions," and will be found to include the names of the foremost living writers on chemistry and the allied sciences, English, American, and foreign—a sufficient guarantee of the authority of the work. Nor should the reader attempt to study or consult the Dictionary without first mastering the very full table which is given of the abbreviations which are used throughout its pages.

In the part which deals with inorganic chemistry, each element is described in its alphabetical position. The nomenclature adopted is for the most part that which is used in the *Journal of the Chemical Society*. The account of each element is followed by

accounts of its binary compounds and those compounds which might be called double binary, also in alphabetical order. Each group of salts, with a few exceptions, is described under one heading—for example, all carbonates are described under the heading "Carbonates," all nitrates under the heading "Nitrates," and so on. The salts of any specified metal are not, as a rule, enumerated in the article devoted to the metal; but in a section of this article a short account is given of the salts of the metal in question, considered as a class.

The general idea, in the part relating to organic chemistry, is to devote a separate article to each compound, and to arrange these articles in strictly alphabetical order. Exceptions are made in the salts of acids and of bases, the ethers, chlorides, amides, anilides, and anhydrides of acids and others. These are all described in the same article as the parent substance. The headings of separate articles are in thick black capitals; the salts are in spaced type; the alkyl (alcohol radicle) and alkoyl (acid radicle) derivatives are in spaced Italics; and derivatives of derivatives are in spaced type; subsidiary articles are in black type.

In describing a compound, the physical constants (*e.g.*, melting-point, boiling-point, solubility, refractive index) are first given, then follow the modes of formation and preparation of the body, then such properties as cannot be expressed numerically, and finally a list of the chief reactions in which it plays a part. The melting-points are inclosed in square brackets, the boiling-points in round brackets.

The present volume runs to 752 pages of close type printed in double columns on each page. The first article is on "Abies"—the last is on "Chemical Change." Among the noteworthy articles in this volume are those on "Acids" ("Salts of Hydrogen"), "Affinity" (by Dr. Wilhelm Ostwald, of Leipzig), "Aggregation, States of;" "Alcohol," and "Alcohols;" "Aldehydes," "Alkaloids," "Ammonium-Compounds," "Analysis" (running to about 50 pages, and contributed by Dr. William Dittmar, Professor of Chemistry at Anderson's College, Glasgow); "Aromatic Series," "Arsenic," "Atmosphere," "Atomic and Molecular Weights," "Azo-Compounds," "Bacteria" (from the pen of Prof. E Ray Lankester, M.A., F.R.S.); "Benzene," "Blood" (by Dr. W. D. Halliburton, Assistant Professor of Physiology at University College, London); "Bromo-Compounds," "Carbon Group of Elements" and "Carbon" (both articles by Mr. Pattison Muir);

"Cellulose," and "Chemical Change" (this latter article by Mr. J. J. Hood, D.Sc.).

We conclude this brief sketch with an expression of admiration for the industry and learning which are reflected from every page of this classical work, the success of which is assured.

Report on the Mortality and Vital Statistics of the United States, as returned at the Tenth Census (*June*, 1880). By JOHN S. BILLINGS, Surgeon, U. S. Army. Part II. Washington: Government Printing Office. 1886. 8vo. Pp. clviii and 803.

THIS large volume of nearly 1,000 pages apparently forms the second part of the Report issued by the Department of the Interior on the tenth census of the United States, taken on June 1, 1880. We do not remember having seen the first part of the Report.

The volume before us bears on its title-page the honoured name of Surgeon John S. Billings—a worker who has done so much for scientific and statistical medicine during the past decade.

The "Introduction" to the Report on the Mortality and Vital Statistics of the United States runs to 158 pages of folio size. It embraces sections on locality in relation to deaths, with remarks and tables on urban and rural mortality; on causes of death; on morbidity or sick rates; on births, birth-rates, and life tables, with a discussion on these last; on ages of the living population, with conclusions and recommendations. To illustrate the relation of locality to deaths, the United States are divided into twenty-one "grand groups," or territorial districts, most of which are included under the headings "coasts," "hills, plateaus, and table lands," "river belts," and "plains and prairies." These twenty-one grand groups are shown in a large coloured map. In the section on "Causes of Death," a series of maps of the United States are given to illustrate the topographical distribution of the causes of death specified in a gigantic Table (XIII.), extending over 183 pages. These maps show by different shades of colour the different proportions which the number reported as due to these causes of death bear to the whole number of deaths reported, taking the State unit as the unit of area, and in the case of diphtheria using also the county as the unit.

Scarlet fever is the first disease which is considered from the point of view of a special cause of death. During the census year

(1880) it caused 16,388 deaths: of the victims 8,181 were males and 8,207 were females. The number of deaths from this disease in each 100,000 deaths from all causes was 2,165, or a little over one-half of that for 1870—namely, 4,128, and less than one-third of what it was in 1860—namely, 6,698. In England and Wales the proportion for the ten years, 1870–79, was 3,674; in 1880 it was 3,300 per 100,000. The mean age of those dying of scarlet fever in the census year was 5 years. Under this age the proportion of deaths is greater in boys than in girls—above this age the reverse is the case. Scarlet fever caused a higher proportion of deaths in the large cities (26·7 per cent.) than in the rest of the country (21·6); and in those parts of the country in which the distinctions of colour and of race were made, it caused a much greater proportion of the deaths among the whites (20·9) than among the coloured (3·9), and greater among the Germans (30·1) than among the Irish (24·0), or than among the rest of the white population. We learn with a melancholy interest that the proportionate mortality under 5 years of age is greatest for children of Irish parentage. The whole history of scarlet fever in the United States indicates that the disease has always been much rarer in the south than in the north. Dr. Billings considers that this is not to be explained on the ground that scarlet fever cannot prevail in warm climates. Dr. Hirsch has pointed out that the disease has often been epidemic in the tropical countries of South America, while in some temperate latitudes it is among the rarest of diseases. A circular diagram, indicating the relative prevalence of scarlet fever in the different months of the year in 31 Registration Cities, shows that the disease was most fatal in the winter months (November to February), and next to these in May, June, and July; and that it was least fatal in August, September, October, March, and April.

The foregoing synopsis of the information given on the subject of scarlet fever will suffice to prove the value of the work.

In 1880 pneumonia caused 63,053 deaths, of which 35,493 were of males and 27,560 of females. Of each 100,000 deaths, 8,330 were due to this disease, compared with 4,772 in England and Wales. The mean age at death of those who fell victims to pneumonia was 32 years. "The evidence," writes Dr. Billings, "with regard to pneumonia furnished by the data of the Census of 1880 tends to favour the opinion that it is not a disease especially due to climate, and more particularly to the influence of cold, and

to support the views of some modern pathologists, that a large proportion of the deaths reported as due to this disease is due to a specific infectious cause." (Page lxv.)

The facts relating to diphtheria—that scourge of American cities—will appal the reader. In the census year diphtheria slew 38,143, and croup 17,966 victims—56,109 in all. The statistics make it certain that diphtheria has been unusually prevalent in the Northern portions of the United States for several years. In 1880 the deaths from diphtheria numbered 5,039 out of every 100,000 deaths in the United States, but only 532 in England. The identity of croup and diphtheria is corroborated by the fact that the greatest proportional number of deaths from both fall in almost precisely the same months throughout the year.

At page cxliii, *et seq.*, a valuable series of Life Tables will be found. These tables are prepared after the method of Dr. Farr, and are based upon figures actually obtained by the Census and from the records of Registration of Deaths.

To the Report Dr. Billings appends some important conclusions and recommendations; to the latter we trust effect will be given by the United States Government in connection with the Census of 1890, which is now within measurable distance.

Accompanying Part II. of the "Report of Mortality and Vital Statistics," but in a separate portfolio, are 17 plates and 38 diagrams, illustrating by curves the statistical results brought out by the Tables in the body of the Report, the scientific value of which is thereby much enhanced.

INTUSSUSCEPTION RELIEVED BY HYDROSTATIC PRESSURE.

Dr. G. R. Batter (*Brooklyn Medical Journal*) reports a case of intussusception in a child aged three years. When seen, vomiting had been going on for twenty-four hours, and the matter thrown up had a slightly stercoraceous odour. The child was placed on its face across the mother's lap, and the buttocks were elevated. A soft catheter attached to a fountain syringe was then introduced into the rectum; tepid water was slowly injected to the amount of thirty five ounces. The child was then placed on its left side, with its hips on a pillow. It now fell asleep, and remained so for six hours, when it awakened and passed the enema with some scybala, followed by a copious evacuation the following morning. The child quickly regained its normal state and no further trouble resulted.

PART III.

HALF-YEARLY REPORTS.

REPORT ON NERVOUS AND MENTAL DISEASE.[a]

By Ringrose Atkins, M.A., M.D.; Resident Medical Superintendent District Lunatic Asylum, Waterford.

I. INSANITY IN GENERAL.

"*Communicated Insanity.*"—Some little time since the newspapers contained reports of the murder of an imbecile boy in the Co. Kerry by the members of his own family, who had all become suddenly affected with mental derangement, symptomatised by hallucinations and delusions of a religious character, under the influence of which the murder was committed. Happily such cases are rare in this country, but that it was not an isolated instance is proved by the particulars of the following cases brought before the "Association of Medical Superintendents of American Institutions for the Insane," by Dr. Goldsmith and others, and published in the Proceedings of the Association. Dr. Goldsmith, in a paper on "Communicated Insanity," recorded the following case in connection with a family living in Genesee County, Michigan:—A woman, a person of excitable mental organisation, became insane; she had suffered from a previous attack, and in consequence of failing physical health and general debility had a second attack of insanity. Her husband was an epileptic, who neglected and abused her, until she was obliged to seek refuge with her mother. Her mother was at best a person of feeble intellect. She had borne a large family, and had been a victim of manifold fortunes. Her husband was an inebriate; several of her children had been insane, and one or more of them had been deficient mentally; so that the whole family was neurotic, and predisposed to develop insanity. The woman who became insane had a married

[a] The author of this Report, desirous that no contributions to the subject of Nervous and Mental Disease should remain unnoticed, will be glad to receive any publications which treat of it. If sent to the correspondents of the Journal they will be forwarded.

sister living in the same family, who had come home to help to take care of her. This woman was deformed in body, but had considerable brightness of intellect, and a strong vein of superstition. She explained the insanity of her sister to be due to the machinations of her husband, whom she believed to exercise witchcraft over her, to put spells upon her, and the like. Among other things she believed that a watch he carried possessed magical power. In one instance, at her suggestion, the watch was taken from him when he was asleep, and put under the pillow of a sick child. He soon awoke, missed the watch, seemed in great distress, and made such a clamour that it was returned to him. As soon as it was restored to him he became quiet, but the child grew worse, and soon died. This was proof positive to the sister that the child had also been killed by witchcraft. The family then combined, at her suggestion and instigation, and threw him out of the house. This, however, was but the beginning of serious troubles; all the members of the family, some twelve or fourteen in number, soon became impressed with the idea that they had all been bewitched through the same agency. They immediately stopped up the windows and doors, and to break the spell began to fire silver through the windows. They were informed by the sister that spiritual agencies like mesmerism and witchcraft could not be dispelled by ordinary iron or lead bullets; it was necessary to shoot silver, and as long as their money lasted there was an active fusillade. All the glass in the house was shot out, and, as they were exceedingly poor, the money soon disappeared. The sufferings of the insane woman, however, were not relieved. She was exceedingly manical, and, of course, was not quieted by this treatment. They thought that her husband must be somewhere in the neighbourhood, and was still exercising a baneful influence over his wife; they accordingly bent all their energies to preserve the life of this woman until he had exhausted his powers of witchcraft. They repeatedly cut off the ends of her fingers and toes, under the belief that if the blood continued to run her life would be saved. At the end of a week or two a physician visited the house to see the insane woman, and was stabbed with a knife by her sister. The authorities were summoned, and the two women were arrested and committed to the asylum. The mother and several of her children and grandchildren were taken to the poor-house, two or three sons were taken to gaol, and the nest was broken up. The other members of the family, when taken away

from each other, soon lost their delusions, or became ashamed of them, and returned to their work. The two women, however, who were sent to the asylum were under treatment for some time. The woman who had the systematised delusions of witchcraft maintained her belief in witchcraft in a modified form up to the end of her treatment, but after a couple of weeks began to acknowledge that she had a delusion, and was unwilling to talk on the matter. She finally became very much ashamed when allusion was made to it, and at last began to believe that her sister had not been bewitched, but was "actually insane." She improved rapidly, and was soon removed by her husband. The woman who suffered from maniacal excitement when brought to the asylum made comparatively slow improvement, but at the end of five or six months was well enough to be taken from the institution. Dr. Gilman mentioned the case of a man who became insane with delusions, and the wife entertained the same delusions while he was with her at their home; but his insanity was promptly recognised, and he was removed to hospital for treatment, and before many days had elapsed the wife was entirely well. There was no evidence of insanity in her case afterwards, although her delusions were similar to his while he remained with her.

Dr. Fletcher recalled the case of a family, in the State of Maine, named Pinkham. In the first instance the father, labouring under some religious delusion, proposed that they should give up all their property and sacrifice their children. The latter entered into that common belief, and the father and mother did kill five members of the family, and then committed suicide. Another case occurred in Indiana within the past three years. Three Germans—two brothers and a sister—living a little more isolated than the rest of the community, and possessing little, if any, education, were the subjects. The older brother conceived the idea that the devil had taken possession of the farm, and that they could not raise good crops until they had succeeded in unearthing the devil, who was to be found under a certain boulder in the barn-yard. The elder brother commenced digging, and rolled up great boulders—it was in a boulder-drift region. He worked hard for several days, and then his brother was possessed by the same belief, and, finally, the sister also; and the three of them were engaged there for more than six weeks in making an excavation, removing about twenty feet of the surface, the hole being about fifteen feet in depth. Many large boulders were brought to the

surface, and rolled out, with the expectation that they would roll out the boulder the devil was under. It became a matter of such public importance that the neighbours had them arrested and sent to the hospital. Two of them recovered from their delusions in the course of two or three months—the sister first—probably from a complete change of surroundings, and the improvement of the diet. They picked up in flesh, and after a while all acknowledged it was a delusion. Whether the brother exercised an influence which brought on insanity in the other two, is a question. They all laboured under the same delusion ; they all believed in the presence of a devil under the boulder, and endeavoured to get him out.

Dr. Hinckley brought forward a case which had come under his observation. There were two brothers, residing in New Jersey, some twenty years ago. One brother was about twenty-five years old, and the other two years older. The younger brother became suddenly demented, and the older brother, who had exhibited for him much sympathy, and had always been quite strong, nursed him for a period of six weeks. At the end of that time the family removed the younger brother to an asylum. The older brother suddenly manifested the same symptoms as the younger brother, and they were both removed to the asylum at Trenton, where they remained for a number of years ; in the end they were removed to their home, and are now under Dr. Hinckley's observation. The symptoms are very much alike in both cases. The history shows that there is no hereditary mental disease or neurotic tendency ; but the cases are so much alike that they attract attention in the matter of symptoms—one constantly imitating the other. If the younger brother is sitting at the table, and stops eating, the other brother will immediately stop also. It was found necessary to remove one from the other, in order to allow either to get proper sustenance.

Dr. Long described a case somewhat similar to that related by Dr. Goldsmith, which had come under his observation. About five or six years ago he was called to see a woman, the wife of a labourer, in a family that he had some acquaintance with. They were, perhaps, of the average intellect of persons in their station, the husband being a common labourer, and they lived quite comfortably. The Salvation Army had invaded the city about two weeks before, and they had been regular attendants at the meetings. The husband asked him (Dr. Long) to call and see the wife. He went there and found her very excited and nervous,

and she said she felt inspired to kill her children—they had three children—in fact, she said it was imperatively necessary that they should be sacrificed. He prescribed for her, and suggested the calling in of a neighbour to look after her, and then told the husband that she was insane, and must be looked after very closely. He directed her not to be left alone with the children. The husband expressed the opinion that there was no necessity for the neighbour being called in, as he could attend her himself; he thought she was somewhat nervous from attending the meetings too closely. There was nothing abnormal about the husband, except, perhaps, his failure to fully realise the grave condition of his wife, and the danger to the children, as he did not think it necessary to watch as closely as he was advised. On the following day the wife's condition was unchanged, so far as her delusions and homicidal tendencies were concerned. On the following morning he (Dr. Long) was summoned to see the husband. He found him possessing the same delusions as the wife, fully as much excited, and as fully determined to kill the children. At the end of one week they were both transferred to the Michigan Asylum for the Insane. In six months from that time the wife made a good recovery, but now, at the end of five years, the husband is still in the asylum, and his recovery is looked upon as hopeless.

In a paper on "*Folie à Deux*," read in the psychological section at the meeting of the British Medical Association, in Dublin, Dr. D. Hack Tuke records several somewhat similar cases which had come under his own notice, and others which had been published in Italy and Austria. He classes these cases under five heads:—

1. Cases in which A. B., being insane, affects C. D, in consequence, and infects him with the same mental disorder.

2. Cases in which C. D. becomes insane from companionship with A. B., not in consequence of the direct transference of morbid ideas, but in consequence of the shock or strain arising out of the painful impressions produced by witnessing the attacks, or by the strain of nursing a patient.

3. Cases in which two or more persons become insane simultaneously from the same cause.

4 Cases may even be included in which one lunatic infects another lunatic with his special delusions.

5. Twins.

Uterine Disease in the Production of Insanity.—Dr. Alice May Farnham, of the Willard Asylum for the Insane, in a paper on this subject, published in the *Alienist and Neurologist*, draws the following conclusions:—

1. That while the female reproductive organs and the brain are closely associated, often acting and reacting on each other, uterine disease alone is seldom or never the cause of mental alienation. Other conditions, as hereditary predisposition to insanity, poor bodily health, or mental worries, one or all furnishing the necessary adjunct to the development of disorders of the mind.

2. That in insane women, irritation of the genitalia often gives a peculiar character to the mental condition; and

3. Menstruation, like any periodic lowering of the standard of the general health, frequently acts in cases of mania as the excitant of the most marked maniacal outbursts.

II. NEURO-ANATOMY AND PHYSIOLOGY.

The Minute Structures of the Corpora Striata and Optic Thalami.—By Dr. Vittorio Marchi. The recent studies of Prof. Golgi on the nervous centres effected by means of the black reaction which was discovered by him, have brought to light a new series of facts of the greatest importance in relation both to anatomy and physiology. In his researches he studied the nervous elements morphologically, endeavouring to discover whether to the different functions ascribed to the various cerebral zones there corresponded differences in structure, and with this object in view he directed his attention specially to the central and the occipital convolutions, the so-called motor and sensory zones. Dr. Marchi has continued these researches into the structures of the corpora striata and optic thalami, and his essay has obtained the prize given by the Royal Institute of Lombardy. From an extended and minute examination the following conclusions have been arrived at:—

1. The nerve cells met with in the corpora striata are of two sorts—great and medium. They are furnished with numerous prolongations, among which one only is distinguished by special characters, and this one is the nerve prolongation; all the others correspond to the so-called protoplasmic prolongations.

2. The nerve prolongations behave in a double way; some of them at a short distance from their origin lose their proper individuality, subdividing in totality, and giving place to a very fine nervous net-work (cells of the second type); the others go directly

to constitute the axis cylinder of a fibre, but not without giving forth some slender branches, which are lost in the nervous network before mentioned (cells of the first type).

3. In the two nuclei of the corpus striatum, both types of cells are observed, with prevalence of those of the second type; this predominance is, however, less pronounced in the lenticular nucleus.

4. In the optic thalami we do not find isolated groups of cells—they are scattered irregularly in the whole mass of the gray substance; they are prevalently large, and many are very similar to those of the anterior cornua of the spinal cord; they present, as in the corpora striata, the unique nervous prolongations and many protoplasmic prolongations.

5. Cells of the first type predominate in the optic thalami, thus differing from the corpora striata.

6. In correspondence with the two-fold behaviour of the nervous prolongation, the fibres join with the cells of the corpora striata and optic thalami, either by directly coalescing with the nervous prolongation of the cells of the first type, or indirectly losing themselves in the thick netting formed by the nervous prolongations of cells of the second type, together with the lateral branches, emanating from the prolongation of the cells of the first type.

7. The internal capsule contains fibres which unite directly the cerebral peduncles to the corona radiata; others departing from the peduncle, halt in the ganglia of the base; others, again, go from these to the corona radiata; finally, some spring from the cells contained in the thickness of the capsule itself, and take an ascending or descending course.

8. As regards the protoplasmic prolongations, denying most precisely that they take part in the formation of the nervous network, Marchi, from his own observations, is inclined to hold that, by their fine ramifications, they are in relation with the vessels and with the cells of the neuroglia.

9. The neuroglia is essentially represented by cells having numerous long fine prolongations, ramifying many times; they proceed by means of various expansions to be inserted on the walls of the vessels.

10. Lastly, the ependyma which covers the corpora striata and the internal faces of the thalami is constituted by cylindrical cells, the slenderest part of which is continuous with a prolongation which gives place to very many ramifications, most of which are inserted into the vessels.

Resting on the basis of these anatomical results, Marchi offers the following remarks on the physiology of the organs:—It has been seen that both in the corpora striata and the thalami two special types of cells exist, wholly differing in the behaviour of their prolongations, and it has been noted that in the corpora striata, and especially in the lenticular nuclei, there is a predominance of the cells of the second type, and that, on the contrary, those of the first type predominate in the thalami. Now, if we keep in view the researches of Professor Golgi on the spinal cord, in which he found that in the posterior cornua (sensory) cells of the second type predominate; whilst, on the contrary, those of the first type predominate in the anterior cornua (motor), and if we, therefore, rest on this finding, the hypothesis would not, according to him, be unfounded that the former belong to the sensory sphere, and the latter to the motor. So, in deference to this deduction, Marchi ventures to formulate the following hypothesis:—As both types of cells exist in the corpora striata and the thalami, it may be argued that in both of these ganglia mixed functions are effected—that is, of sense and of motion; but considering that in the former gangliar cells are found to predominate, whose prolongations subdivide complexly, losing their proper individuality, just as those which predominate in the posterior cornua of the spinal cord, we may, with some foundation, suppose that the corpora striata belong prevalently to the sensory sphere (!). On the other hand, as we find preferentially present in the optic thalami cells whose nervous prolongations, though giving out lateral branches, yet maintain their proper individuality in order to constitute, in conformity with what takes place in the anterior cornua of the spinal cord, a fine nervous fibre, there is some ground for holding that functions of motion (!) are prevalently effected in the optic thalami. Finally, from the cells and nervous fibres in the corpora striata and the thalami, are brought into relation, a new basis may be found for the law formulated by Golgi, that in all parts of the nervous system the specific function, whatever be its nature, must be effectuated, not indeed by an isolate or individual action of the several gangliar elements, but by an associate action of extended groups of cells.

The method of preparation discovered by Golgi and adopted by Marchi in these researches is as follows:—In order to secure a good black reaction it is necessary that the pieces of the brain or cord be hardened, and not injured. If possible, it is better to use

the brain taken from young animals, or, better still, from fœtuses, as in them, as the nervous fibres are mostly free from myelin, the reaction is easier obtained. Before extracting the brain it is useful to make repeated injections of a two per cent. solution of bichromate of potassium into the carotids; the liquid is thus rapidly distributed in the nervous texture, and the subsequent hardening becomes more homogeneous. Having done this, rather large pieces are then cut and placed for twenty-four hours in Müller's fluid, that they may acquire a certain degree of hardness; small bits are then cut with a razor, and these are again placed in Müller's fluid for about eight or ten days, if the temperature be fairly warm; but if it be not, it is necessary to leave them immersed for a longer time. After this they are taken out and placed in a mixture composed of eight parts of Müller's fluid and two parts of a one per cent. solution of osmic acid—this mixture serves to accelerate the hardening. There must be plenty of this solution, and the pieces must be small. At the end of twenty-four hours they are removed to a solution of nitrate of silver of ·60 per cent., which should be changed in half an hour, in consequence of the precipitate which is formed. In this last solution it is necessary that the pieces remain from twenty-four to forty-eight hours. If, however, they should happen to be left longer, it does not cause any alteration. After this, the examination may be commenced by making sections from the pieces; these sections must be rather thick, as it is necessary to extend the observations over a long tract of the course of the nervous prolongations, and they should then be cleared in the following way:—After thoroughly washing them in common alcohol, they are placed directly into creasote, and are left there until quite transparent. They are then repeatedly washed in spirit of turpentine, leaving them in it for twenty minutes. After this, they are mounted in Canada balsam, without covering glasses. By this process the preparations are preserved for a long time, whilst by the ordinary method of rectified alcohol—absolute alcohol—and oil of gloves, they become yellow in a short time. This defect may be remedied by putting the preparations into spirit of turpentine until the balsam is removed. The sections are then washed in fresh water and mounted. After this process the sections turn clear, and will then keep perfect for years.

Pal's Method of Staining Nerve Tissue.—In the *Brit. Med. Jour.*, March 10, 1888, Dr. Wethered publishes, by permission, the method of staining sections of the brain and cord recently intro-

duced by Professor Pal, of Vienna. It is in reality a modification of Weigert's method, but differs from it in many particulars. Dr. Pal claims the following advantages for this modification:—The picture produced is sharper in outline; the nuclei and nerve cells can be separately stained, and the process is a more speedy one. Not the least advantage is that the treatment of the sections by a solution of acetate of copper is entirely done away with. Having worked with both processes, Dr. Wethered fully confirms what Dr. Pal states regarding his process. The method is as follows:—The spinal cord or brain is hardened in Müller's fluid in the ordinary manner, and when ready is embedded in paraffin, and the sections are cut into absolute alcohol. An aqueous solution of hæmatoxylin, of the strength of $\frac{3}{4}$ per cent., is then made by dissolving the hæmatoxylin by means of heat, and, after cooling, some alcohol is added. This solution must not be kept very long, or allowed to stand in the sunlight. Immediately before using, a few drops of a solution of carbonate of lithium are added. On the addition of this salt, the solution assumes a violet-red colour. Dr. Pal uses three or four drops of the lithium carbonate solution to 10 cubic centimètres of the hæmatoxylin. The sections are allowed to remain in this stain for about five or six hours, at the end of which time they should be of a bluish-black colour. They are then thoroughly washed in water until no more colour comes out. If they do not appear to be deeply enough stained, a few drops of the lithium carbonate solution may be added to the water in which they are washed. The sections are next to be "differentiated." For this purpose, they are first placed in a $\frac{1}{4}$ per cent. solution of permanganate of potassium for fifteen to twenty seconds, and then for a short time into "Pal's solution," until the white and gray matters are plainly defined—this is generally completed in one or two minutes. If black specks are seen on the sections, or if the white and gray matters are not quite distinctly defined, the process is to be repeated. "Pal's solution" is composed of oxalic acid, 1 part; sulphide of potassium (K_2SO_3), 1 part; distilled water, 200 parts. After having been taken out of this solution, the sections are thoroughly washed in water, and the nuclei may then be stained in eosin or carmine; the stain which acts best being alum-carmine. After another washing the sections are dehydrated by absolute alcohol, cleared in oil of cloves or creasote, and mounted in balsam. Stained in this manner, the medullated nerve fibres are coloured blue, and stand out sharply on a white back-ground, presenting a

strong contrast to the red nuclei. In order to bring out the nerve cells prominently, after the specimens have been "differentiated," they are placed for a short time in picro-carmine, which should be only slightly alkaline, and after being washed in water, the nuclei may be stained as before in alum-carmine.

Alkanna for Myelin Staining.—Achard (*Archives de Physiologie*, 1887, No. 2) recommends a concentrated alcoholic solution of the cortical portions of alkanna root for the central nervous system, and also for the peripheral nerves. Fragments of the roots are macerated in a relatively large volume of ninety per cent. alcohol for several days in a well-corked flask, until the solution has a garnet-red tint. The solution must frequently be prepared anew. Specimens hardened by the chrome salts are left in this solution about two hours, avoiding the access of air by using carefully-closed dishes. If the hardening has been protracted, the sections should not remain too long in the staining reagent, for the colour may become too diffuse. The stained sections are rapidly washed in water and mounted in glycerine. The myelin has a deep brown colour, and the result is similar to that given by Weigert's method; with the disadvantage, however, that the sections cannot be mounted in balsam, for this procedure removes the colour completely. The sections may be stained with carmine first, and subsequently with the alkanna.

Changes produced in Ganglion Cells by Hardening Reagents.—Trzebinski (*Virchow's Archiv*, Bd. 107, No. 1) has studied the changes produced in the ganglion cells of the spinal cord in dogs and rabbits, by using the following reagents:—

1. Müller's fluid (five to six weeks), followed by alcohol.
2. Alcohol, ninety-six per cent.
3. Chromic acid, followed by Müller's fluid or alcohol.
4. Hardening in a ten per cent. solution of bichloride of mercury for eight days, and subsequent hardening in alcohol containing five per cent. of iodine. He found that reagents 1 and 3 produced very serious alterations in the contour and finer structure of the cell, which have undoubtedly been ascribed by some authors to pathological processes.

In specimens hardened by reagent 4 these changes are reduced to a minimum. Vacuoles, and pale or faintly stained ganglion cells are absent. The pericellular spaces are small, and the finer structural details resemble closely the appearances seen in the cells when examined in the fresh condition. The condition of the cells

after alcoholic hardening closely resembles the result obtained by the corrosive sublimate hardening, and the author indicates a preference for the latter method. (Von Gieson, in the *Journal of Nervous and Mental Diseases.*)

A Ready Method of Preparing Large Sections of the Brain.—Dr. Byrom Bramwell, in the January number of *Brain*, describes a method which he has adopted for cutting thin naked-eye sections of the brain, allowing the pathologist to examine tumours, foci of softening, &c., without any laceration or injury to the surrounding tissue. The preliminary hardening of the brain is best effected by injecting the organ as a whole with Müller's fluid. With the object of facilitating the process of injection, and allowing the fluid to distribute itself evenly and equally throughout the whole brain tissue, Dr. Bramwell uses an ordinary stomach pump syringe, and a "distributor" (which he figures) consisting of a hollow globe of brass, from which four tubes pass, which are connected by means of rubber piping and canulæ to the two carotid and two vertebral arteries, and also by a larger tube with the syringe. Each of the tubes is attached to its canula, which is firmly tied into the artery. In order that this attachment may be easily made, it is necessary in removing the brain to see that the vessels are cut as long as possible. Each canula should be attached to its tube before being tied into the vessel, and all four tubes should be tied into the arteries before they are attached to the distributor. Before proceeding with the injection, it is advisable to place the brain in a large wide-mouthed jar, filled with Müller's fluid. The fluid in which the brain is immersed should be changed, and the brain reinjected on the following day. After an interval of two days the process should be repeated, and a further injection may be made later if thought desirable. The fluid in which the brain is immersed should be changed at least four times. At the end of a month or six weeks the organ is sufficiently hard to cut into sections.

In those cases in which it is necessary or desirable to cut into and examine the brain in the fresh condition, the organ should be cut into a series of thick transverse vertical sections, each section measuring from two to two and a half inches in thickness. After the sections have been carefully examined, and any morbid appearances described and noted, each section is placed in a shallow flat jar, large enough and deep enough to hold it easily, which is then filled up with Müller's fluid; the jar (the edge of which is ground

flat for the purpose) is then covered with a glass plate, and the preparation set aside until the following day. The Müller's fluid should be changed, and the sections turned daily for at least ten days. In order to prevent any destruction of the section in the process of changing the fluid and turning, it is advisable to withdraw the fluid by syphon action. After drawing off one syringeful of fluid, the tube is disconnected from the syringe, care being taken that while this is being done the end of the tube connected with the syringe is below the level of the jar, and the remainder of the fluid is allowed to flow off by syphon action.

The brain section is best turned by reversing the empty flat jar which has, after it is emptied, been covered with a glass plate; the jar is then lifted off the cover and filled with fresh Müller's fluid, into which the brain section is allowed to glide off the glass plate. These details are important, inasmuch as they do away with the necessity of fingering the brain tissue, and thereby prevent any possibility of tearing it, while still in the soft unhardened condition. At the end of a month or six weeks, these thick portions of brain are sufficiently hard to permit of being cut into thinner sections. The outer surface of sections prepared in this way is considerably shrunken, and any morbid appearances that were present in the fresh state will, in it, be unrecognisable; but the interior of thick portions of brain prepared in this manner is splendidly hardened, permitting of perfectly clean section and displaying many morbid conditions, such as tumours, softenings, &c., in a very beautiful manner. For cutting a series of thin naked-eye sections of the entire brain, Dr. Bramwell uses a simple apparatus, constructed as follows: two pieces of hard wood are joined together so as to form an L shape; the horizontal limb measures 11 inches in length, 8 inches in breadth, and 1 inch in thickness; the vertical line $7 \times 8 \times 1$ inches. The piece of brain which is to be cut in thin sections is, when taken from the Müller's fluid, to be placed against the vertical limb, and firmly pressed against this by means of a glass plate laid against the other surface. Being thus fixed, the section is cut with a long thin-bladed knife, such as pathologists use for cutting the brain, but with a longer blade; the left hand presses the glass against the piece to be cut, while the section is steadily and evenly cut with the right hand. After the section is made the stand is tilted up, so that the vertical limb becomes horizontal, the glass plate is then removed, and the sections are floated off by immersing the end of the stand with the

brain on it in water; in this manner all risk of tearing or lacerating the section is avoided. With a little practice, sections a quarter of an inch in thickness may be cut in this way; they may then be pinned on a wooden board and photographed to preserve their exact appearances. Any portion of these sections may be cut out, placed in any microtome, cut in thin sections, and examined by any of the ordinary microscopical methods, and it is possible to piece together as it were these microscopical sections, or at all events to be quite sure of the continuity of the structures in any given series from a transverse or horizontal section of the brain. If it be thought desirable to make quite thin sections of the entire piece, the latter may be prepared frozen and cut by the method recommended by Professor Hamilton of Aberdeen, which is, however, too laborious, and takes up too much time to render it suitable for ordinary every-day use.

[*To be concluded.*]

A PHYSIOLOGICAL BASIS FOR AN IMPROVED CARDIAC PATHOLOGY.

Professor T. Wesley Mills, of Montreal, thinks that, at present, the views on the pathology of the heart are too mechanical. He believes that in every living organism there is a possible maximum of vital force; in organisms with a nervous system there is a similar maximum of available nervous energy, the amount depending on the condition of the animal at the time. There are continually flowing along the nerves, from the nerve centres, influences essential for the nutrition of the tissues, and every functional act involves a corresponding nervous outflow. If too great a call is made by one part on the nervous energy other parts must suffer from insufficient supply. By this theory he explains the evil effects on the heart which have been seen to follow sexual excess and undue muscular exertion, as in those training for athletic contests. He thinks that there is such a thing as residual nerve force, which is usually not called on, even when a man makes powerful efforts. "But, under extraordinary excitement, even this last resource is drawn upon, and invariably with the result of leaving the organism more or less bankrupted." In the case of the heart he accepts the views of Gaskell, that the vagus fibres tend to increase constructive cardiac metabolism, while the sympathetic fibres favour destructive metabolism. This interesting and suggestive paper, written by one who has himself done so much to advance our knowledge of cardiac physiology, will well repay perusal.—*The Medical Record*, October, 1887.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—Robert M'Donnell, M.D., F.R.S.
General Secretary—W. Thomson, M.D.

SECTION OF OBSTETRICS.

President—John Rutherford Kirkpatrick, M.D., F.K.Q.C.P.
Sectional Secretary—Andrew J. Horne, F.K.Q.C.P.

Friday, December 23, 1887.

The President in the Chair.

The Hymen as a Proof of Virginity.

Dr. Kinkead read the following paper on the above subject:—

Although the chief interest of the cases I have the honour to submit for the consideration of this Section is chiefly medico-legal, yet one of them is worthy of record as being a decidedly successful gynæcological operation.

Great reliance is placed on the presence of a perfect hymen as proof of virginity.

Thus: "Of late years experienced obstetricians, such as Barnes, Oldham, and Tyler Smith, have sworn to the fact of females being *virgines intactæ*, chiefly on the ground of the integrity of the hymen;" and Meymott Tidy, from whose forensic medicine the above quotation is taken, "thinks there are good grounds for accepting the following statement of Caspar, with the addition" he "has placed in brackets:—'Not assenting to that unfounded scepticism, which has been asserted in regard to this question, both in earlier and more recent times, I must declare, that when a forensic physician finds (in a girl arrived at puberty) a hymen still preserved, even its edges not being torn (and more particularly if the aperture be undilatable and of small size, and the membrane itself normally placed and of ordinary shape and structure), and along with it (in young persons) a virgin condition of the breasts and external

genitals, he is then justified in giving a positive opinion as to the existence of virginity.'"

The last sentence is delicious—if a virgin condition of the genitals be found the woman is a virgin. Self-evident; but what is a virgin condition? How many or how few attempts at intercourse will constitute a non-virginal condition? What forms of local or general disease, debility, or development will simulate a non-virginal condition?

These are points which, although a good deal may be said on both sides, I have not time now to enter on; or on the question, apart from pregnancy, how to recognise, or what constitutes a virginal condition of the breasts, or how long sexual intercourse must be continued to change their virginal character. That, taking all the usual signs of virginity, the diagnosis is sometimes deficient, the well-known case reported (by Brent Duchatel) shows. But when dealing with the hymen alone the difficulty is vastly increased. If a woman were a virgin until complete penetration had been effected, in most cases the physical distinction between a virgin and a woman who had lost her virginity would not be difficult; for although cases would be found in which, owing to disproportion, elasticity, relaxation, small size, or excessive development of the hymen, it had not ruptured during intercourse, yet such cases would prove the exception to the general rule.

But I take it that a virgin ceases to legitimately enjoy that title when intercourse, even though it be merely vulval, has taken place; and unless such intercourse be forcible or often repeated, I confess that I know of no physical signs which will testify to the fact. The following cases will show that the hymen, *per se*, may be no evidence at all of a virginal condition. The proviso made by Caspar—"even its edges not being torn"—is a most important one. I think it was Schroeder—but am not sure—who, some years ago, called attention to the fact, that the hymen was not destroyed by intercourse—only torn—and that, as a general rule, it was not destroyed until after the first delivery. This fact I have verified myself. The depth to which the hymen is lacerated depends on the size of the male organ, the frequency of intercourse, and the condition of the female genitals, the latter being far more distensible and yielding near a menstrual period. Therefore the only injury done the hymen may be, and often is, after one or two attempts at intercourse, slight lacerations of its edge, but even these may not exist after repeated attempts have taken place, nor in some after complete penetration :—

Case I.—Early in 1880, shortly after I had been appointed Medical Officer of Her Majesty's Prison, Galway, I admitted X., a prostitute, about twenty-four or twenty-five years old, to the hospital of the prison. She was suffering from secondary syphilis, also from condylomata, and complained of sores on, and discharge from, the vulva.

Her history was, that being seduced when about seventeen, she had been for some time mistress of her seducer, after which she went to Aldershot, and spent two years there, as a common soldier's prostitute. She returned to Galway and spent her time between the prison and prostitution with soldiers and sailors. She thus accounted for seven years of her life before she came under my care.

On examining her I found that the external genitals were certainly not virginal, but there was no enlargement of the nymphæ, no laceration of the fourchette, and there was a perfect, well-developed unruptured hymen, the edges sharp and perfect without a single tear; the fossa navicularis was depressed, and the orifice of the vagina very deeply seated. The cause of non-penetration seemed to me to be that the arch of the pubes was of the masculine type—angular—and the vulvæ placed more towards the back than usual. Be that as it may, the fact remains that, as far as a perfect hymen, of normal size, consistency, and shape, was concerned, the woman was a virgin after seven years' prostitution.

Moreover, in order to treat a sharp attack of gonorrhœal vaginitis, I had to pass a small-sized Ferguson's speculum, during which operation the hymen tore without any extra force.

Case II.—I was consulted for amenorrhœa; various symptoms of uterine disease were described, and the possibility of pregnancy positively denied. On examination the external genitals were found virginal, the hymen perfect, its edges sharp and untorn, its size, shape, position, and consistency normal, the breasts plump and well formed, showing no existence of pregnancy; the fundus of uterus could be felt over the pubes, and finally the patient confessed that she had once had intercourse—about three and a half months previously, just before a menstrual period was due.

Putting aside the enlargement of uterus, there were no physical signs indicative of the fact.

Case III.—I was sent for a short time ago to see a woman in labour; she was under the care of an experienced midwife, who told me, on my arrival, that the patient had been some hours in strong labour, that the head was presenting, and low down, but that owing to the woman having been operated on for some disease of the uterus (prior to marriage) the os would not dilate. On proceeding to examine, my finger met with an obstacle at the vaginal orifice; the feeling conveyed was distinctly that of the vaginal walls being adherent from the orifice upwards—how far I could not say. On having the patient turned to the light, the cause of the obstruction was at once apparent.

The entire orifice was filled by the hymen, evidently thick, and projecting from the orifice in a perfectly semi-spherical shape, and with an aperture no larger than a crow quill. So small was the opening, that

notwithstanding the pressure on the hymen of the liquor amnii, the fluid escaped in drops. The edges of the orifice were thin and white, the remainder of the hymen red.

I had no difficulty in lacerating it with my finger. The torn section was triangular, increasing from a line at the edge of the opening to about one-fourth of an inch at the base. I shortly after delivered her with the forceps, without difficulty.

She told me that when a girl she had no changes; she suffered from pains every month; that, finally, a tumour appeared in the abdomen; that she was admitted to St. Vincent's Hospital, and there operated on, after which her changes appeared. She was under the impression that the operation had been performed by Dr. Roe, but this impression was erroneous. As, however, she states that it was about ten years ago, and is positive as to the hospital, her case may be remembered by some of the staff of St. Vincent's Hospital, and it would add much to the interest of the case to know to what extent accumulation of the retained menses had taken place, and whether the uterus had been distended, or merely the vagina. The opening in the hymen then made must have been very much larger than that which existed when I saw her.

Judging by the size of the hymen, intercourse must have been entirely vulvar. The urethral orifice was enlarged enough to admit the tip of the finger, but the dilatation did not extend more than one-fourth of an inch up the urethra.

Many cases of pregnancy following vulvar intercourse are on record, and some where pregnancy is reported to have occurred with "completely imperforate hymen;" but it is evident that in these cases adhesive inflammation must have set in after impregnation. The case is singular, from its following an operation for retained menses, and from the orifice being completely blocked by a hymen with so minute a central opening.

Case IV.—In this case the curiosity was the size of the hymen, and that I was able to deliver the woman, with the forceps, of a male child, without injuring the hymen.

The woman was over forty years of age, in labour of her first child. The hymen was exceedingly voluminous, springing from the anterior portion of the vaginal orifice, below the urethra, and hanging down, apparently outside the vagina.

I am aware that very many cases are recorded of pregnancy advancing to term with unruptured hymen; but I doubt if the relative frequency of the existence of the hymen after sexual intercourse is generally appreciated. Its presence is merely presumptive proof of purity; its absence, or evidence of its having been torn, is hardly even presumptive proof of want of chastity.

Admitting that a hymen of normal size, shape, and consistence, may be evidence that penetration has not taken place, I doubt that we can say more.

Case V.—A lady called on Mr. ——, who gave the following history of her case:—She had suffered from "displacement of her womb," owing partly to being obliged to stand for a long time every day, and lift weights, and partly the result of a fall. She had been under medical treatment, and finally a support had been put in, after which she felt very well, was able to enjoy life, follow her usual occupation, and take long walks, but being on a tour she had over-walked herself, and the old discomfort came back. She was certain the support must have become displaced, and the falling down of the womb came back.

As the support had been in several months, it probably needed changing. I took out a medium-sized ring pessary, and found the uterus in its proper position, but the patient would not be content without it. Now, the interest of this case, for the purpose of this paper, lies in the fact that, notwithstanding uterine treatment and the introduction of medium-sized pessary, the vulva was what we call virginal, and the hymen unruptured, but its edge was not perfect. In the centre of the edge was a small notch—evidence of a slight tear of the margin of the hymen during treatment, either resulting from the passage of a speculum or the introduction of the pessary.

Given such an appearance of the genitals without any history of treatment, or in some medico-legal case in which one would place little reliance on the statement of the subject examined, then judging from the virginal appearance of the vulva, and presence of a normally-sized and situated hymen, a strong opinion might fairly be formed that no foreign body of any considerable size had penetrated the vulva, or taking into account the notch in the edge of the hymen, an equally strong opinion might be maintained that sexual intercourse had occurred. Yet, both conclusions would have been wrong.

Mr. S. M. Thompson said a case came under his notice in the South Dublin Union of a woman who came in to be delivered, thinking she was in the family way—though it afterwards turned out that she was not—but whose hymen was completely unruptured. There were two very small openings in it, each of which was not more than the size of a pin's head. After she came into the hospital she menstruated freely.

Dr. Byrne said that impregnation, notwithstanding an unruptured hymen, was not of infrequent occurrence. He could recall one or two instances of women who had led married lives, and who nevertheless had the hymen perfect. The fact proved that not much value could be attached to the existence of the hymen as a proof of virginity.

Dr. Macan said it was a fact attested in old books on midwifery that the hymen remained until after a child had been born, and then it disap-

peared. Before that the only effect of intercourse or of the introduction of instruments was to drag the hymen; and sometimes it was not injured, while in other cases it was cracked, and more or less hæmorrhage ensued, but that injury might afterwards be repaired. If its edges were quite perfect they might be certain that nothing had been introduced.

Dr. Atthill said that the term virginity, both with medical men and the public, ordinarily meant that there had been no sexual intercourse; and looking at the existence of the hymen as a test of virginity, from that point of view he was perfectly satisfied that even a slight cracking of the hymen did not necessarily follow from intercourse. In certain cases the hymen yielded, like a piece of India-rubber, to gentle pressure, without cracking, and afterwards regained its previous condition, and it was only cracked by parturition.

Mr. Doyle said he could confirm the statement just made as to the dilatable nature of the hymen. He had had a case under his observation of a lady who was subjected, during a period of three or four weeks, to examination per rectum, and also per vaginam by speculum and sound, and who afterwards had a small pessary introduced, and yet in the end the hymen was found to be in the same position it had originally occupied, and quite perfect.

Dr. Kinkead, in reply, said that, as Professor of Midwifery in Queen's College, Galway, and as a Lecturer on Medical Jurisprudence, he had been strongly impressed with the necessity for reliable facts in this matter for the guidance of legal inquiries. He quite agreed with Dr. Macan and Dr. Atthill, that the hymen was not destroyed, but only simply lacerated, until after parturition. And it might be absolutely untorn, and its edges perfect, and yet the woman might not be chaste. Yet he had often heard evidence from the witness-box, as to a woman being or not being a virgin, made entirely dependent upon whether the hymen was or was not destroyed. On the other hand, they might find a torn hymen in a woman who was chaste. Therefore it was a dangerous doctrine which was laid down in medico-legal works, that any great weight could be given to the presence of the hymen as proving that a woman was a virgin or not.

Case of Vaginal Extirpation of the Uterus, in which both Ureters were tied.

Dr. A. V. Macan read the following paper on the above subject:—
In the summer of 1886 I was fortunate enough, when visiting Berlin, to see Dr. A. Martin remove a uterus per vaginam for malignant disease. Ever since my return I have been on the look-out for a case that I thought was suitable; but the patient, whose history I shall relate to-night, was only the second case on whom I thought the operation should be performed. The first patient, at the time the diagnosis of malignant disease of the fundus was first made, felt so well that she refused to allow

the operation, and when she came back nearly two years later the fundus had grown to an enormous size, and the operation was out of the question. Since I operated on this patient on October 12th, three other cases have presented themselves, in two of whom I have operated. The third was, I thought, too anæmic for an operation at present, and her husband removed her from the hospital.

The case I wish to bring before you to-night is shortly as follows:—

Mrs. ——, aged sixty-seven, was sent up to me from Dr. Jennings, of Ennis, for shedding accompanied with a fœtid discharge, which had been going on for eight months; is forty-seven years married; has had eleven children and one miscarriage. She is twenty-four years past the change of life, and was in her usual health till eighteen months ago, when she noticed a thick yellow discharge from the vagina. About eight months ago this turned to a new discharge, which had continued almost continuously ever since, but some days is more profuse than others. Has noticed that the discharge has a very bad smell; does not think she has lost flesh, and she is as active as ever, but has no appetite.

On examining her I found the external genitals moist, and there was a very bad smell. On washing out the vagina a very dirty discharge escaped, in which were a number of small, ash-grey particles like broken-down tissue. No hæmorrhage was caused however by the end of the Bozhman catheter. Still I was astonished on introducing the finger to find the cervix small and healthy. On now passing the Bozhman catheter into the uterus, which was easily done, the same sort of discharge again gushed out, followed by some hæmorrhage. Before withdrawing the Bozhman I turned the fundus, which had been posterior, forwards; and then on making a bimanual examination I found that it was small and freely movable. I therefore made the diagnosis of malignant disease entirely confined to the interior of the uterus, and advised the patient to come into hospital for operation, which she did on Sept. 27th, 1887. On Sept. 29th she was again examined in the surgery, and there was slight hæmorrhage and fœtor when cavity of uterus was washed out. On the day before operation I again washed out the uterus, and plugged the cavity with iodoform gauze.

On Oct. 12th I removed the uterus per vaginam, Drs. Lane and Smith assisting me. I adopted, with only a slight modification, Dr. Martin's method, as I had never seen the operation performed by anyone else. It will, I think, save time and prevent confusion if I first briefly describe Martin's operation, and then mention the difficulties I found in performing it. The vagina, having been first thoroughly disinfected, a Fritsch's speculum is then inserted, and the posterior lip of the cervix caught with an American forceps, and drawn forcibly downwards and forwards. An incision is now made round the posterior margin of the cervix, and the posterior vaginal wall separated from the cervix till the peritoneum,

which is recognised by its bluish transparent appearance, is reached. The edges of the wound in the vagina are then sewn parallel to the incision, so as to bring the peritoneum and vaginal wall together. In this way all hæmorrhage is arrested. The fore-finger of the left hand is then inserted into Douglas' space, and the neck of the uterus being drawn well over to the right side, a ligature of double silk is passed under guidance of the finger in Douglas through the lower part of the left broad ligament, and tied firmly. A second and third are similarly passed and tied, each including a higher portion of the broad ligament. This process is repeated on the right side in a similar manner. The central fissure is now incised, and the bladder separated from the uterus as far as the peritoneal reflexion from uterus on to bladder. This is done as much as possible with the finger and the handle of the knife. The next step is to free the cervix on each side from the broad ligament as far as they are commanded by the sutures. While doing this each vessel should be tied separately as it is cut through, in order to lessen the chance of secondary hæmorrhage. The fore-finger is now again inserted into Douglas' space, and passed over the broad ligament and into the utero-vesical pouch, and the peritoneum in this position divided on the finger. The fundus is now retroflexed—if possible bimanually—and drawn out through the opening in the posterior *cul-de-sac*. This brings the whole of the upper remaining portion of the broad ligament into reach. Round this, under guidance of the finger, a ligature is passed, and the remains of the ligament are tied first *en masse*. A double ligature is now passed through the centre of the pedicle, but nearer to the uterus than the last, and each half is tied separately. The uterus is now freed entirely on this side, all vessels that are seen being ligatured separately, and the same thing is repeated on the remaining attachment of the uterus. When this last is cut through the uterus is quite free, and can be removed. During all this time the wound in the vagina is kept constantly irrigated by a stream of plain warm water. As soon as the uterus is removed a search is made for any bleeding points, which are sewed, and Douglas' space and the vagina are washed out. Dr. Martin then inserts a large drainage tube into Douglas, the end of which he doubles upon the vagina, and the operation is finished.

This was in the main the operation I performed, but I commenced by separating the bladder from the cervix, and the opening into Douglas' space was rendered difficult by my incising the cervix so deeply that it separated entirely from the body of the uterus, under the traction that was used to draw it downwards.

The operation lasted over two hours, but the amount of blood lost was not more than three or four ounces. The patient had borne it very well, and before she was put to bed the catheter was passed, and a small quantity of urine was drawn off. Soon after coming out of the ether the

patient began to complain of pain in the lower part of abdomen and back, and in the afternoon Dr. White—in whose charge she was—sent down word that he had passed a catheter, but had not found any urine in the bladder. In the absence of any cause for an acute and total suppression of urine, I at once came to the conclusion that I had tied both ureters. As it was already quite dark, I had to put off any further operative interference till next morning.

On thinking over what was the best thing to do, there were several plans occurred to me. First, to put a catheter in the bladder and then cut the ligatures one by one till urine came from the catheter. The sudden gush of retained urine would probably have enabled me to recognise when the second ureter even was freed; but by this plan I might be cutting ligatures that had not caught the ureters at all, and thereby running a great unnecessary risk of hæmorrhage. I therefore determined to incise the bladder freely in the mesian line, then evert the two edges and try and find the orifices of the ureters, and pass a probe down each till it reached the point of obstruction, and then cut the ligature that seemed to be nearest to this point. This I did, but the orifice of the ureters was hard to find, as the small jets of urine by which their locality is generally recognised, were of course wanting. Any one who has tried to find them in a bladder removed after death will fully appreciate this difficulty. At last, while everting the mucous membrane, I caught sight, for a moment, of a small dark speck, about the size of the head of a small pin. This I lost and found again several times before I was able to demonstrate that it was the orifice of the ureter by passing a probe down it to the point of obstruction. I then examined to see which ligature seemed nearest to the probe, and cut it, watching anxiously for the hæmorrhage, which I felt certain must come, and which I hoped to control with large compression forceps. No hæmorrhage, however, followed, nor was the ureter freed till two ligatures were cut on one side, and two or three (I am not now certain which) on the other. I have seldom experienced such a sense of relief as when the second gush of urine came from the second ureter, and I felt my object was accomplished, without any serious hæmorrhage. The absence of the latter I think was due to the great care I had taken to tie all vessels seen in the face of the bound ligament stump, separately. I then brought the wound in the bladder together with six silk sutures.

Though the ureters were now quite free, I was well aware that the prognosis must be a guarded one, till time showed whether the ureters were or were not permanently injured by being included in a tight ligature for twenty-four hours. The patient too, though greatly relieved after the operation, was never quite well, and about ten days after the nurse reported that urine was coming away freely per vaginam. As, however, the patient was able to pass water per urethram, it was

tolerably certain that there was no want of union in the wound in the bladder, and therefore that one of the ureters had opened into the vagina. This was made a certainty by finding that milk injected into the bladder did not escape per vaginam. After about a week the quantity of urine escaping per vaginam diminished partly, and from the pain complained of in the right groin, and right iliac, and lumbar regions, it seemed probable that the right ureter was again becoming occluded. This supposition became a certainty some few days later, when a large, tender, elastic tumour was palpated in the right lumbar region. After a time there was again an escape of urine from the vagina, owing, we thought, to the tension in the ureter having overcome the occlusion. The tumour in the lumbar region at the same time became evidently smaller, and the tenderness less.

On November 29th the patient was attacked with conjunctivitis, which was followed in a couple days by the formation of a large ulcer on her cornea. She was seen on December 4th by my friend, Dr. Maxwell, who opened the ante-chamber. Two days afterwards, she had an attack of acute pneumonia accompanied by sudden and intense pain in the eye, of which Dr. Maxwell was unfortunately not given notice, and when he saw her afterwards the eye was practically lost, nor would the patient then allow anything to be done to relieve the pain. The inflammation of the eye gradually subsided, and the patient went home to Somerville on December 20th. When she left hospital there was still a slight escape of water per vaginam; but the nurse has heard since that this has quite ceased, and that she bore the journey well. She had, however, never recovered her strength, and I fear that there must be some amount of stricture of the left ureter, causing the urine to be secreted under increased pressure, though this has not been sufficient to distend the left kidney sufficiently to be palpated. Indeed it seems to me that the right kidney is now giving her very little trouble; and that, if the left were secreting freely, she would soon gain strength completely. Such, gentlemen, is the clinical history of this case, and I wish sincerely I could stop here. But the worst mistake of all has yet to be confessed, namely, that, though the history of the case and the physical examination of the patient seemed to point indubitably to malignant disease, the microscopic examination of the uterus, kindly made for me by Professor Purser, shows that nothing of the sort is present. There is great thickening and hypertrophy of the mucous membrane, but no carcinoma.

In looking back on the case I can quite see that it was over confidence in my first diagnosis that led to the mistake. But I confess I had never seen or heard of a similar case, though the uterus has several times been removed by well-known operators, under the false supposition that it was cancerous. This case will, I think, at all events prove that the recurrence and persistence of a red discharge twenty-four years after the

change of life, accompanied with a fœtid discharge containing particles of what looked like broken-down cancerous tissue, is not sufficient to justify the diagnosis of malignant disease of the uterus.

Dr. Atthill said Dr. Macan was entitled to the greatest credit for having pointed out in his paper the errors into which he had fallen in the case. There was no doubt that the most eminent men sometimes made mistakes in their practice. He (Dr. Atthill) regarded the dictum of Dr. Lawson Tait, that the occurrence of hæmorrhage in a woman long past her menstrual period was a proof of malignant disease, to be most erroneous. That it afforded grounds for suspicion as to the existence of such disease was certainly true.

Dr. Mason said that last July twelve months he performed the operation of removing the uterus by vaginal extirpation, in a very similar manner to that adopted by Dr. Macan, save that he secured several of the vessels with a catch forceps, while he tied others. The woman recovered, and after two months left the hospital (Coombe). In January following, however, she came back, the disease having returned, and she went into the South Union Hospital, and died there. The disease commenced in the cervix uteri, and extended a long way up; but the uterus was freely movable. The woman was only thirty-five years of age. The mortality resulting from the immediate effects of this operation was only 28 per cent.; but so far as the saving of life was concerned it did not promise much. He found the operation to be the most difficult he had ever attempted. He did not stitch the wound, but left it open; nor did he introduce any drainage tube, though for days after the operation a large amount of red serum came away; and he believed that it was to the free exit of this fluid from the peritoneum that the recovery of the woman was due. She seemed for a while to have quite regained her health and appetite, and was able to take a place as a household servant, but she was afterwards attacked with the disease again.

Uteri removed by Vaginal Extirpation.

Dr. Macan then showed two specimens of uteri which he had removed by vaginal extirpation, and remarked that the correct histories of cases in which, after the change of life, hæmorrhage had occurred, without its being the result of malignant disease, would be of the greatest value. Looking back upon the case on which he operated, he called to mind that the day before the operation he scraped out the uterus for any *débris* of carcinoma that he thought might be there, but got none, the uterus being quite clean. He did not mean to convey that he was the first who performed this operation; what he said was, that it was the first case of the kind that he ever got the chance of operating upon. The first of the specimens he was now showing came from a married women, aged forty-six, who had never had children. The hymen was imperfect; the uterus

was not very big, and was quite movable. The passing of a sound produced profuse hæmorrhage, so that he was obliged to desist from further examination then. Afterwards the uterus was scraped, and cheesy matter came away, attended with a hæmorrhage that was only stopped by an injection of iodine. Some of the pieces that were scraped out were examined by Dr. Purser, who pronounced them to be carcinoma. The uterus was extremely narrow, and apprehending difficulties, he at first hesitated to operate; but afterwards he did so, making three large incisions in the orifice of the vagina. The whole fundus tore to pieces when he thought to retroflex it and draw it out. On the first day after the operation the woman passed nearly two ounces of urine. Her temperature never went above 100°. She had got on very well since, and was now walking about, and wanted to go home for Christmas, but was not allowed, as the stitches were all in still. The second specimen he removed from a woman who had been sent to the Rotunda Hospital. The cervix was carcinomatous, and the fundus was supposed to be healthy, but was retroflexed. The operation was comparatively easy, save that there was a certain amount of hæmorrhage. On the second and third day after the operation her temperature was 102°, but she had gone on very well since.

SECTION OF SURGERY.

President—A. H. Corley, M.D., President of the Royal College of Surgeons in Ireland.

Sectional Secretary—Mr. W. Thornley Stoker.

Friday, April 13, 1888.

The President in the Chair.

On Supra-pubic Lithotomy and Vesical Suture.

Mr. Kendal Franks read a paper on this subject. [It will be found at page 477.]

Supra-pubic Lithotomy.

Mr. F. Alcock Nixon read a paper on supra-pubic lithotomy. The patient, an old gentleman, eighty-one years of age, had, fifty-seven years ago, suffered from bleeding from the bladder and a stoppage of water; the bleeding recurred at intervals every 5 or 6 years for fifty years. The bladder was opened above the pubes and two calculi were removed, one weighing 2 ozs. 30½ grs. the other 159½ grs. They were composed of the ammonio-magnesian and calcium phosphates. The bladder was sutured and drained, a tube was placed in the abdominal wound, and a catheter retained in the bladder.

The temperature, which was 101° Fahr., became normal on the evening of the 3rd day; the urine became acid; patient was quite free from pain, able to take food well and enjoy long periods of sleep.

On the 5th day the patient died suddenly from syncope, from which he previously suffered on several occasions.

After death the wound in the bladder was found to be healed, except about half an inch in the centre, from which urine had escaped through the abdominal wound for a short time on the 2nd day, while the catheter was plugged by a blood-clot. There was no trace whatever either of peritonitis or of cellulitis.

Vesical Tumour Removed by Supra-pubic Cystotomy.

In the unavoidable absence of Dr. Heuston, this paper was read by Mr. Alfred Scott. The patient, aged forty-eight years, suffered for four years from symptoms of vesical irritation, accompanied at gradually increasing intervals by hæmorrhage of an arterial character, which for the later five months came freely at each period of micturition in a considerable quantity.

On his admission to hospital the patient presented an extremely emaciated condition, due to loss of blood and want of sleep, micturition being necessary every hour owing to the irritable condition of his bladder. A tumour was diagnosticated by sounding, situated on the right side of the bladder, in addition to which a roughened condition of the bladder throughout was noticed. The presence of the larger tumour was also demonstrated by rectal examination. The bladder being now washed out, a portion of the tumour came away, which was proved by Mr. Alfred Scott to be papillomatous in its nature.

On March 15th, 1888, the bladder was opened into by the usual supra-pubic method, and a tumour somewhat larger than an orange, composed of three lobules, attached to the right wall of the bladder by narrow pedicles, was removed, as were also a number of smaller growths about the size of hazel nuts. The hæmorrhage, which was very copious, was at once controlled by a solution of tannic and gallic acids, subsequent to which the bladder was illuminated by the electric light, and then a stream of a weak solution of hazelin was passed into the bladder until it returned clear. The bladder was now closed, except sufficiently to allow of the introduction of a drainage-tube, care being taken to close the areolar spaces in connection with the bladder wound.

Subsequent to operation the patient progressed favourably for twelve days, the urine becoming normal in its characters; but then the temperature suddenly rose to 104·2° F., the patient became delirious, and although the temperature was subdued by quinine within 24 hours, the patient gradually sank and died sixteen days after operation.

Dr. Bewley, Pathologist to the Adelaide Hospital, performed a *post-*

mortem examination, and found that there was no peritonitis, the bladder being firmly united to abdominal parietes at seat of wound, which was healthy. Bladder contracted; anterior wall normal, posterior wall thickened and cutting hard. In the centre of this surface a space, about the size of half-a-crown, was covered with white flocculi of seemingly gangrenous tissue; this was the seat of the removed papilloma. Spleen and kidneys healthy, there being no evidence of septic infection.

Mr. W. Thornley Stoker said Mr. Franks had not referred to what was attracting a good deal of discussion in connection with suprapubic lithotomy—namely, the class of cases in which that operation should be selected. As far as any rule had yet been established on the subject it was this, that supra-pubic lithotomy was to be performed in the adult in cases where the stone was too large to admit of its probably successful removal by perinæal operation—*i.e.*, where the stone exceeded 2 oz. in weight, or where, because of its hardness or the great size of the prostate, there was not a likelihood that lithotrity would be successful. Another question was as regards its performance in children. The supra-pubic operation ought to be selected in all cases of stone in the bladder in children where lithotrity could not be performed, as it did not endanger the child's procreative apparatus. There was a remarkable difference in the mortality of children on whom the operation was performed on the Continent as compared with those at home. While the mortality on the Continent was over 20 per cent., it appeared from Sir William MacCormac's paper that up to March last there had been 33 cases operated on in England without one death. Among adults the mortality following the operation would be found to be about the same as that in the lateral operation for lithotomy—20 or 22 to 30 per cent. But in Dublin the mortality in perinæal operations had not been so high. The supra-pubic operation was one that had not as yet arrived at perfection, because, like many other operations, it was undergoing development since the introduction of antiseptics, and he looked forward to the time when the mortality of from 20 to 30 per cent. would be materially diminished. Indeed, before antiseptic treatment was adopted, Schmidt's tables showed a mortality of 50 per cent. in supra-pubic operations, while, since the introduction of antiseptics, it fell to 20 per cent., death generally resulting from some septic condition acting on the abdominal wound, or on the neighbouring peritoneum. As regards the distension of the bladder, while no one would deny that Peterson's rectal bag should be used, there was doubt as to how far the distension of the bladder without the rectal distension did or did not raise the peritoneal fold. There were two classes of surgical anatomists holding opposite opinions on the point—Garston, Pearson, Fellisen, and Sir Wm. MacCormac, teaching that the distension of the bladder alone was not sufficient to lift the peritoneal fold to an extent to allow of a safe operation being per-

formed between it and the upper border of the pubes; while, on the other hand, Barwell, Trendelenburg, and others taught that rectal distension was not essential, and that the bladder was sufficient to raise the peritoneum beyond the reach of the surgeon's knife. The frozen section which he exhibited, showing the peritoneal relations of the distended male bladder, demonstrated that there was a great deal in the teaching of Barwell on the subject. Barwell was right in laying down that at least in some cases the bladder distension afforded a safe space. In the preparation on exhibition the distance between the top of the pubes and the peritoneal fold was as nearly as possible 8 centimetres (something over 3 inches). In Fellisen's drawings, to which Mr. Franks referred, and which Sir Wm. MacCormac adopted in his paper, the extreme distance obtained by hyperdistending the bladder was between 2 and 3 centimetres. Another remarkable difference between his specimen and Fellisen's was that under hyperdistension Fellisen's assumed a globular form, whereas his was more of a pyriform shape, as taught in the schools.

Mr. Tobin suggested, with reference to the different expedients of obtaining room to make an incision, holding the patient's legs aloft. He had tried the experiment on a subject in the *post mortem* room. Having half filled the bladder, he measured the amount of space uncovered by the peritoneum while the subject was lying flat on the table. He then raised the subject, holding the legs aloft, and on measuring again he found he had double the space with the subject in the raised position than he had when prone.

Mr. J. H. Scott mentioned a case of a gentleman, aged sixty, who had been under his care for urinary irritation, from which he suffered for several years. He discovered a very large stone. The urine was fairly healthy. He thought the best chance was afforded by the supra-pubic operation, which he accordingly performed. There was great difficulty in suturing the bladder. For three or four days the case went well; but then diarrhœa set in, and on the ninth day the patient died. At the time he feared the distension of the rectum might have caused the irritation which produced the diarrhœa, but he did not think so now, having ascertained that the patient had contracted a form of dysentery on the Ganges. Still, it was noteworthy that in a patient subject to diarrhœa any mechanical irritation might produce that condition with fatal consequence. The fatal result in his case was not due to the operation, the wound being healed by first intention, and the urine become perfectly healthy. Nevertheless, the operation of supra-pubic lithotomy was becoming too fashionable, and he agreed with Mr. Stoker that there should be a careful selection of cases suitable for it. Where there was much decomposition in the urine from bacteria and pus there was small chance of getting primary union of the bladder, which was so

essential to success. In such cases the old operation was preferable, infiltration ending generally in death. Harrison, of Liverpool, advocated, in the lateral operation, the use of large India-rubber tubes to fill up the whole of the wound, thus providing drainage from the bladder and preventing infiltration. With that improvement suprapubic operations were likely to become fewer in number.

Mr. M'Ardle said Mr. Franks had omitted a few of the most interesting cases of suprapubic lithotomy which had been recently recorded by Subbotic (*Wien. med. Woch.*, 1887). There were six in number, in three of which the vesical suture was applied, and union by first intention occurred. On the successful suturing of the bladder the future suprapubic lithotomy would greatly depend; and hence he called attention to a method, valuable in certain conditions of the bladder, which contra-indicated double suture as usually applied—namely, what was styled by Brenner "Schnürnähen," or lace suture. Its application was thus described:—After separating the mucous from the muscular coat, a thread was passed round the wound in the bladder through the submucosa, two to three millimetres from the wound border. A second thread was now passed through the muscular layer, three to three and a half millimetres from the wound border, going round the wound in the same way, being further from the wound at its angle. The sutures were then drawn and tied in the order of introduction, so that all the walls of the bladder were collected into a dense mass at the point of opening. In experiments on dogs it was found that the bladder thus closed withstood much higher fluid pressure than after button or ordinary double suture. He did not advocate this suture where the bladder wall was normal, since the usual double suture had succeeded in all cases favourable for its application; but when the bladder wall was thinned or softened he would expect from the lace suture the best results. Brenner, its originator, claimed for it, among other advantages, that the bladder became functionally active immediately, and the catheter need not be retained; that the wound surface was very small, and healed quickly; and that the scar was thick and solid, and that only two small threads were left in the wound. Again, Kremer had proved that rectal distension was unnecessary, and that careful distension of the bladder raised it sufficiently above the pubes for all practical purposes. Rectal distension became necessary only in the presence of a contracted bladder with thickened walls. With Mr. Stoker's views on the selection of cases he fully agreed, while he emphasised the necessity of accurate records of suprapubic lithotomy, especially the fatal cases. If such records were to be of statistical value, the conditions prior to, during, and after operation must be detailed to enable operative surgeons to determine the real dangers of the operation *per se*.

Deputy Surgeon-General Joynt did not think that a case had been made out for supra-pubic lithotomy to displace the lateral operation, with

which he had been familiar in India, where he had operated in not less than one hundred cases. Out of that number he could only recollect one fatal case, and whether that was due to the operation or not he could not now say. He could understand, however, that the suprapubic operation would be an acceptable one in women, there being a good deal of trouble in operating on them. He had had cases in which he removed stones one and a half inches in circumference from young girls by dilatation of the urethra, aided by incision.

Mr. Chance inquired what measure of distension was advisable, having regard to the fact that exploration was sometimes followed by a sharp attack of peritonitis.

Mr. Thomson was glad to hear Deputy Surgeon-General Joynt, whose great experience in India carried authority, say a word in favour of the old operation of lateral lithotomy. With regard to removing big stones by the supra-pubic operation, another operation was being practised now in India very successfully, in which there was no cutting at all—namely, an operation introduced by two distinguished graduates of Irish Universities—Surgeon-Major Keegan and Surgeon-Major Freyer. The results they had had from the crushing of stone quite eclipsed any from the cutting operations, and they were not deterred by the number of stones in the bladder; but Surgeon-Major Freyer reported several cases where there were two to six stones, and he crushed them in detail, the patients recovering without a bad symptom. It was most important to have the experience of surgeons who had done the operation of opening the bladder above the pubes, as there were other conditions than the presence of stone to be encountered—for instance, tumour in the bladder. He believed the dangers in the supra-pubic operation were not less than with lateral or median perinæal operations, and that as large stones had been removed by the lateral operation as by the suprapubic.

The President suggested that the authors of the papers should lay stress in their replies on the question of the particular cases suitable for the supra-pubic operation, otherwise it might be imagined that that operation was intended as a substitute for lateral lithotomy. Irish surgeons should speak with humility on the subject; for Dease had written that stone was a very rare affection in Ireland. Even after lithotrity had been introduced and established, Mr. Peel, one of the best operators in the city, used to protest he could not see in a cut in the perinæum any such dangers as were imagined by some operators. At present litholapaxy where it could be carried out, seemed most successful, and least trouble to the patient. He did not think enough had been said of the dangers of the lateral operation to rush to the suprapubic as a substitute. There were some cases in which the supra-pubic might be the best, but it was not so in all.

Mr. Franks, replying, disclaimed laying down the law on any point,

speaking, as he did with diffidence, on the experience of a single case, and his object being to give the Academy the benefit of his reading on the subject of supra-pubic lithotomy. He took a more hopeful view of the future of that operation than had been taken by either the President or Mr. Thomson ; and, as regards the epidemic of supra-pubic cystotomy, he had not the slightest doubt that it would become severe and prevalent. As compared with the lateral operation, the supra-pubic had many superior advantages. It was absolutely safe as regarded hæmorrhage, and nothing could be cut that would do harm. As Mr. Stoker observed, in children supra-pubic lithotomy would become the recognised operation as not endangering the procreative organs. The reason he himself performed the operation, the subject of his paper, was not, as stated by Mr. Thomson, because there were three stones present, but because there was great difficulty in sounding on account of an enormous prostate, and the perinæum was so deep he could get his finger only half way up the prostate through the rectum. Moreover, the man being sixty-five years of age, he thought it was a case in which supra-pubic lithotomy was indicated. Those who were not advocates of it, such as Sir Henry Thompson, had limited the operation to where the stone was too large to be removed by the perinæal route without causing considerable damage, or where the perinæum was deep and the prostate large, rendering lithotomy, or lithotrity, difficult or dangerous. All Sir Henry Thompson's cases were cases of large stones, and he does not recommend that the operation should be performed in cases where the stone was less than two ounces. At the same time he was inclined to think that supra-pubic lithotomy would be adopted in cases where the perinæum was not very deep, and where the stone was not very large. Wounding the peritoneum was not now a thing to be staggered at, if precautions were taken to close it. The two great dangers of supra-pubic lithotomy were also those of lateral lithotomy—namely, infiltration of urine and blood poisoning; but, in supra-pubic lithotomy, antiseptics could be adopted to a degree inadmissible in lateral lithotomy. Moreover, death from urinary infiltration was not a result very much to be feared. As regards Mr. Chance's question, the degree of distension would depend on the size of the rectum and the age of the patient.

Mr. Nixon also replied.—He had determined on the supra-pubic operation from the condition of the urine, the condition of the bladder, and the large size of the stone, and also because he suspected there was a second stone, which turned out to be the case. He had no doubt that syncope was the cause of death. The patient had been afflicted with hæmorrhage of the bladder for over fifty-seven years. From an experience of one case he was not prepared to lay down a hard-and-fast rule as to the cases in which the supra-pubic operation should, or should not, be performed.

SECTION OF MEDICINE.

President—James Little, M.D.; President of the King and Queen's College of Physicians.

Sectional Secretary—A. N. Montgomery, M.K.Q.C.P.

Friday, April 20, 1888.

The President, Dr. James Little, and subsequently—whilst the President's communications were before the Section—Dr. Arthur Wynne Foot, in the Chair.

Note on the Relief of Migranous Headache.

The President (Dr. James Little) read a paper on the value of a combination of salicylate of sodium and caffein in migranous headaches. [It will be found at page 489.]

Dr. Wallace Beatty expressed indebtedness to Dr. Little for having, about a year and a half ago, suggested to him the combination mentioned in his communication for the relief of migranous headache. Since then he had used it in a great number of cases with marked efficacy. In January, 1887, a gentleman consulted him for headache, with which he was attacked three times a week. He awoke in the morning with headache, which increased in intensity, so that he got sick several times, and he was unable to go to business until late in the day. Dr. Little's combination was tried and proved exceedingly useful, and the patient had been since prescribing it generally among his friends. The combination also proved useful in the case of a barrister who sat up late at night, and when he at length went to bed he awoke with a headache which prevented him from going to the Four Courts for some hours. In another case, where there was severe neuralgia on one side of the head without sickness, salicylate of sodium and caffein relieved the headache; but as the neuralgia depended on the anæmic state of the blood, the treatment had no effect until the anæmia was rectified.

Mr. Cox, having regard to the fact that the three cases mentioned by Dr. Little were those of females, asked whether the affection was more common among women than men, or whether it attacked the sexes indiscriminately; secondly, whether, if the disease was of a neuralgic character, but in which constipation was a predominant symptom, what effect would a purgative have in warding off the attack; and thirdly, whether the migranous headache had any connection with the menstrual period. He had himself found that the active principle of tea and coffee had a powerful beneficial effect.

Dr. Atthill, speaking from a large practice, exclusively among females, said Dr. Little had suggested the combination to him two years

ago, and having prescribed it since in twenty or thirty cases, he had always found some benefit, and in the majority of cases the benefit was considerable. A near relative of his own had been suffering for many years from migranous headache. She awoke with uncomfortable tightness across the forehead. She could not get up. She took little or no breakfast, or if she took any she got worse, and, as the day advanced, the pain intensified unless she kept quiet, the attack lasting sometimes 36 hours. The only thing she thought did her good was a prescription of her own—namely, lemon-juice and soda in effervescence, which afforded relief by lessening the nausea. Chloral also proved useful by procuring sleep at the end of 14 or 15 hours after the attack. She took caffein by itself without the slightest benefit; but since she commenced to take it in combination with salicylate of sodium, as Dr. Little prescribed, the attack was shortened, and in many instances stopped altogether. She never suffered from constipation, and had no symptom of neuralgia. In another notable case the combination also proved of decided benefit. A girl consulted him who was very anæmic and delicate-looking. She had a wretched appetite, and was unable to take exercise. She had headache three times a week, with amenorrhœa—not total suppression, but very scanty. He treated her for the amenorrhœa, and also prescribed Dr. Little's combination with marked benefit—relieving the headache. She hardly stayed a day in bed since. This form of headache, especially near the menstrual period, was accompanied by ovarian pain, and in such cases he administered 20 gr. doses of bromide of sodium.

Mr. John J. Burgess treated a business lady, aged forty-four, who had been upwards of fourteen years a victim to intermittent attacks of headache at intervals of six weeks, reduced to three weeks, when she consulted him, the pain commencing over the left eye, then passing to the right side of the head, and then over the head, resulting in vomiting, the pulse being weak and the temperature low. The most efficacious remedy he found was a full hypodermic injection of morphin, but she was advised by a clergyman against it, and she passed into other hands. He also found 15 gr. doses of antipyrin useful in relieving the headache.

Dr. John William Moore felt justified in mentioning other remedies, having regard to the probable state of tension of the arteries about the head, as indicated by the rigid appearance of the temporal artery, and also the weak pulse. These remedies were nitro-glycerine, the tabloids of the Pharmacopœia; and nitrate of amyl. He also sometimes gave 1 to 2 grs. of butyl chloral every half hour until relief was obtained, as more useful than the ordinary chloral hydrate. As regards Dr. Little's combination, the good effect of the effervescent draught of salicylate of sodium and caffein was probably due to the action of the salicylate of sodium on the liver. Once the bowels were freed and the tendency to nausea was relieved, the headache disappeared almost like magic.

Mr. R. Montgomery said he found that a combination of sulphate of magnesium, bicarbonate of potassium and bromide of potassium, a wineglassful in the morning with a wineglassful of hot water, gave great relief. Sulphate of magnesium has an aperient action on the stomach, preparing the way for the salicylate of sodium to act beneficially. He was opposed to the use of chloral and morphin, as sometimes calculated to do more harm than good.

Mr. W. F. West observed that he found 30 gr. doses of guarana every four hours gave marked relief.

Dr. Finny pointed out that there being a multiplicity of varieties of headache, the disease could not be classified under the heading of migraine alone. The symptoms differed, for instance, where there was ovarian irritation, or where the exciting cause was anæmia, or a disordered stomach, in which last case the relief afforded by sulphate of magnesium or other aperient showed the close connection of the stomach with the headache. The President's paper referred to a headache of the purely neuralgic type—the most terrible of all. He had never used the President's combination, but felt satisfied that the profession would have reason to feel indebted for it. He had tried to anticipate the attack or nerve-storm by a course of arsenic. Hence caffein, as supporting the nervous system, was one of the best drugs, and would be most efficacious when the treatment was carried out by arsenic or some nerve tonic. The bromides were also most useful; and if the attacks were preceded by nerve symptoms, as deranged vision or perversion of the senses, such as hallucinations, he considered a full dose of bromide of potassium would be of great use.

The President, in reply, said the attacks were quite as common in men as in women—certainly among neurotic persons. He did not know that the combination would prove efficacious if the bowels were entirely neglected; but, on the other hand, no amount of purgation would keep off the attack. Those nerve-storms were more likely to occur at the menstrual period when they attacked women. Gastric pains were liable to make themselves felt at the menstrual period, but he did not attach much importance to these symptoms. The true, typical migraine was happily a very rare disease. When the combination he had recommended was not successful, a rather free hypodermic of morphin was the only thing to give relief. The advantages of salicylate of sodium were of wider application than those of antipyrin. No doubt, as Dr. John Wm. Moore observed, the salicylate of sodium was a hepatic stimulant; for he had noticed the relief which it gave persons who upset the liver by too free living, and it was mentioned in that relation by Rutherford in his experiments. He had no doubt of the value of Mr. Montgomery's combination where an aperient was required. Another advantage of the salicylate of sodium and caffein mixture was that it was a dose which was not disagreeable to take, and was tolerated by the stomach

Note on the use of Saccharin in Chronic Cystitis.

The PRESIDENT read a note on the use of saccharin in chronic cystitis for rectifying the ammoniacal effluvia of the urine. [It will be found at page 493.]

The CHAIRMAN (DR. A. W. FOOT) asked whether the saccharin was more beneficial in tubercular cystitis, or rheumatic, or gonorrhœal, or simply in mucous cystitis?

SIR WILLIAM STOKES inquired what was the *modus operandi* as regards the action of saccharin. He, too, wished to know whether the drug was uniformly useful in the various forms of cystitis, or only in a particular form. He endorsed the President's view as to the great importance of thoroughly evacuating the bladder in all the forms of cystitis, especially in that associated with enlargement of the prostate in aged individuals. Advantage followed the exhibition internally of boric acid in 5 gr. doses, three times a day, and washing out the bladder with a weaker solution.

MR. DOYLE found that acute cystitis, depending on acute inflammation of the prostate, always got well by injecting Condy's fluid, the instrument being first oiled with carbolic oil.

The PRESIDENT (DR. JAMES LITTLE), replying, said the proper heading of his paper should have been, "The Value of Saccharin in Ammoniacal Urine." The cases he had seen were not those of the ordinary cystitis at all, but where the urine had become ammoniacal in consequence of a paralytic affection or prostatic disease, or stricture. Saccharin had no effect on the cystitis except so far as the cystitis was kept up by the ammoniacal condition of the urine, and it was only in correcting that condition of the urine that the saccharin was of use. Tubercular cystitis was a rare affection. A little boy whom he saw in hospital with it was treated with saccharin, but it did him no good. His urine, however, was not ammoniacal. The saccharin did not reduce the amount of pus, but only prevented the urine from becoming ammoniacal.

Note on a Rare form of Mental Disease.

MR. CONOLLY NORMAN read a paper on a rare form of mental affection, first described by Griesinger under the name of *Grübelsucht*. Since Griesinger's time four or five cases have been recorded. The essential condition of the affection is the obsession of the mind by an impulsive concept taking the form of perpetual interrogation. The entire mental energy is occupied with constant questionings about indifferent matters. The patient described by the author was tortured with a desire to read every scrap of written paper which she saw, and was unable to attend to her domestic duties through a constant impulse to investigate every detail of the most familiar things and most familiar operations. The illness

began when she was about five months pregnant. She had borne children in very quick succession, and had been exhausted by lactation. There was also a moral factor in domestic troubles, and worry about money matters. The patient recovered under tonic treatment. Mr. Norman briefly referred to the rarity of this affection, particularly among asylum patients, to the question of its causation, to its analogies to *Folie du doute* and other forms of mental disease, and to the presence in the case which he described of nervous paroxysms such as had been recorded only by Berger among previous observers.

Dr. A. W. Foot said the communication recalled a remarkable paper by Liebin, recording cases of insanity resulting from over-lactation in persons who nursed too long, or from frequent child-bearing; but, though Mr. Conolly Norman had described his case as a peculiar one, yet it was as impossible to differentiate the different forms of eccentricity and hallucination produced by mental derangement as it was to differentiate the figures of a kaleidoscope. Anæmia of the brain, brought on by over-lactation, would doubtless be cured by the stoppage of the secretion and the proper use of tonics.

Mr. R. Montgomery asked was the mental derangement of a character to interfere with the testamentary capacity of the patient?

Mr. S. M. Thompson had under treatment four or five months ago for anæmia of the brain an unmarried lady, a teacher of French and music, whose condition was due to worry. She had recurring attacks during which she could not read certain words, and she became confused and wonderfully curious. The visits of friends recalling old associations affected her; but after some time with rest and quiet she became perfectly cured.

Mr. J. Molony mentioned the case of his tutor, who when out with the boys had the irresistible habit of turning over any stone he met, though he was a clever man and a good scholar.

The President had no doubt the form of insanity described by Mr. Norman was rare in asylum practice, but in ordinary general practice cases were met with from time to time in which the same train of symptoms were presented. Some years ago a business gentleman consulted him whose duty it was in his department to take the invoices and mark on the pieces of cloth the proportionate price to allow the regulation profit. He had been many years at this, and was so expert that no matter what the fractions to which the invoice price descended, he might go on without making a mistake; yet he got into a state of doubt that, even if the invoice price were only a shilling, he could not convince himself that he was right, "though the man inside" told him he was. Another case came under his observation in which a pharmaceutical chemist, failing to convince himself of the accuracy of weight or measure, could not carry on business, and life became almost intolerable. Thus there were many

similar cases in which there appeared to be a letting-go of common sense—a seeking for evidence of self-evident propositions. This occurred less frequently among persons of humble means than among those who had not the necessity of providing food and drink, and were able to indulge the vagaries of fancy. Such persons should try and cultivate what Sir Benjamin Brodie called "a happy recklessness as to results," or seek the overpowering control of a masterful mind, which would not discuss the evidence of those things, but dogmatically assert them. Some useful principles were laid down in a book entitled "Man's Power over Himself to Prevent Insanity," showing how people may, by applying their minds, exercise proper control.

Mr. Conolly Norman, replying, agreed with Dr. Foot that the physical cause of the insanity in the woman whose case he described as peculiar was over-lactation; for she had borne three children within two years and nine months, and she was four and a half months pregnant of the last child before being conscious of the fact, and at the time she was suckling the penultimate one. But her insanity was also partly due to the operation of a moral cause—namely, the worry of her husband's misconduct, and the anxiety of rearing a rapidly increasing family with rapidly decreasing means. She was pregnant when she first got mental disturbance. The symptoms were the most interesting points of the case, and of that particular form of insanity there were only six cases recorded. Although the disease was rare in public asylums, it was probably common in general practice, and hence he brought it forward. The woman's testamentary capacity was a matter of opinion which did not count for much, as she had nothing to will.

The Section adjourned.

DANGERS OF INTUBATION OF THE LARYNX.

Professor Henry D. Ingraham (*Buffalo Medical and Surgical Journal*) points out one of the risks incidental to intubation of the larynx in children—namely, that of swallowing fluids. As is usual in these cases the child was quite thirsty; was not satisfied with the ice, which was given freely, and a teaspoonful of water occasionally. The patient begged for water, and her mother gave her a tumblerful, all of which she drank, although strict orders were given to allow but a teaspoonful at a time, and that was to be given with the patient lying on her side. Immediately the child had a severe paroxysm of coughing, and in twenty minutes was dead. No doubt she was suffocated or drowned by the passage of the water through the tube into the lungs, as when last seen by Dr. Banta and Professor Ingraham, a few hours before, she appeared much better than at any previous time.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. Moore, B.A., M.D., Univ. Dubl.; F.K.Q.C.P.; F. R. Met. Soc.; Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

Vital Statistics

For four Weeks ending Saturday, April 21, 1888.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns	Weeks ending				Towns	Weeks ending			
	March 31.	April 7.	April 14.	April 21.		March 31.	April 7.	April 14.	April 21.
Armagh -	31·0	41·3	15·5	25·8	Limerick -	27·0	22·9	24·3	24·3
Belfast -	42·0	30·5	31·0	29·2	Lisburn -	19·3	14·5	33·8	53·2
Cork -	28·6	15·6	29·2	26·0	Londonderry	23·2	32·1	10·7	16·0
Drogheda	63·4	46·5	25·4	21·1	Lurgan -	20·5	41·0	46·2	35·9
Dublin -	30·1	27·2	26·4	23·8	Newry -	24·6	24·6	24·6	21·1
Dundalk -	13·1	43·6	17·5	8·7	Sligo -	43·3	9·6	9·6	9·6
Galway -	20·2	37·0	10·1	33·6	Waterford -	34·7	13·9	25·5	34·7
Kilkenny	76·1	12·7	33·8	38·1	Wexford -	38·5	38·5	25·7	38·5

In the week ending Saturday, March 31, 1888, the mortality in twenty-eight large English towns, including London (in which the rate was 20·3), was equal to an average annual death-rate of 21·5 per 1,000 persons living. In Glasgow the rate was 27·4; and in Edinburgh it was 22·8.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 33·5 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 3·7 per 1,000, the rates varying from 0·0 in five of the districts to 8·3 in Belfast—the 183 deaths from all causes registered in that district comprising 18 from measles (being 7 over the number from that disease in the preceding week), 13 from whooping-cough (an increase of 8 as compared with the number in the preceding week), 2 from diphtheria, 1 from enteric fever, and 2 from diarrhœa. Among the 44 deaths from all causes registered in Cork are 3 from measles.

In the Dublin Registration District the births registered during the week amounted to 237—123 boys and 114 girls—and the deaths to 211—96 males and 115 females.

The deaths represent an annual rate of mortality of 31·2 in every 1,000 of the estimated population—omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 30·1 per 1,000.

The number of deaths from zymotic diseases registered is 20, being 10 below the average for the corresponding week of the last ten years, and 5 under the number for the preceding week. The 20 deaths from these causes comprise 3 from measles, 2 from scarlet fever (scarlatina), 8 from whooping-cough, 1 from diphtheria, 1 from enteric fever, and 2 from erysipelas, &c.

Ten cases of scarlatina were admitted to hospital, being 4 under the admissions for the preceding week. Twelve scarlatina patients were discharged, 2 died, and 56 remained under treatment on Saturday, being 4 under the number in hospital on Saturday, March 24.

Only 4 cases of typhus were admitted, against 30 admissions in the preceding week. Five patients were discharged, 1 died, and 47 remained under treatment on Saturday, being 2 under the number in hospital on Saturday, March 24.

No cases of small-pox were admitted to hospital. The number of cases of the disease in hospital on Saturday, March 31, was 8, two patients having been discharged during the week.

Three cases of enteric fever were admitted, being 1 under the admissions for the preceding week.

Forty-eight deaths from diseases of the respiratory system were registered, being 2 over the number for the week ended March 24, but 5 under the average for the thirteenth week of the last ten years. They comprise 27 from bronchitis, 14 from pneumonia or inflammation of the lungs, and 3 from croup.

In the week ending Saturday, April 7, the mortality in twenty-eight large English towns, including London (in which the rate was 19·4), was equal to an average annual death-rate of 19·9 per 1,000 persons living. In Glasgow the rate was 24·3; and in Edinburgh it was 22·0.

The average annual death-rate in the sixteen principal town districts of Ireland was 27·2 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 3·4 per 1,000, the rates varying from 0·0 in Galway, Kilkenny, Drogheda, Dundalk, Sligo, and Lisburn, to 10·3 in Lurgan—the 8 deaths from all causes registered in the last-named district comprising 2 from measles. Among the 133 deaths from all causes registered in Belfast are 16 from measles (being 2 under the

number from that disease in the preceding week), 2 from whooping-cough (a decrease of 11 as compared with the number in the preceding week), 2 from diphtheria, 2 from enteric fever, and 3 from diarrhœa. The 24 deaths in Cork comprise 2 from measles. One of the 18 deaths in Londonderry was caused by diphtheria, and 1 by enteric fever. The 6 deaths in Waterford comprise 1 from typhus and 1 from diarrhœa.

In the Dublin Registration District the births registered during the week amounted to 169—83 boys and 86 girls—and the deaths to 188—102 males and 86 females.

The deaths represent an annual rate of mortality of 27·8 in every 1,000 of the estimated population—omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 27·2 per 1,000.

Twenty-two deaths from zymotic diseases were registered, being 2 over the number for the preceding week, but 5 under the average for the fourteenth week of the last ten years. They comprise 5 from measles, 3 from scarlet fever (scarlatina), 2 from typhus, 4 from whooping-cough, 1 from ill-defined fever, 3 from enteric fever, &c.

During the week 3 cases of small-pox were admitted to hospital, and 3 small-pox patients were discharged; 8 cases of the disease remained under treatment on Saturday, April 7, being equal to the number in hospital at the close of the preceding week.

Seven cases of scarlatina were admitted to hospital, being 3 under the admissions for the preceding week, and 7 under the number for the week ended March 24; 11 patients were discharged during the week, and 52 remained under treatment on Saturday, being 4 under the number in hospital on Saturday, March 31.

Twelve cases of typhus were admitted, being 8 over the admissions for the preceding week, but 18 under the admissions for the week ended March 24; 6 patients were discharged, one died, and 52 remained under treatment on Saturday, being 5 over the number in hospital at the close of the preceding week.

The admissions to hospital include also 3 cases of enteric fever, being equal to the number of cases of that disease admitted during the week ended March 31.

Forty deaths from diseases of the respiratory system were registered, being 13 below the average for the corresponding week of the last ten years, and 8 under the number for the week ended March 31. They comprise 19 from bronchitis and 16 from pneumonia or inflammation of the lungs.

In the week ending Saturday, April 14, the mortality in twenty-eight large English towns, including London (in which the rate was 20·6), was equal to an average annual death-rate of 21·9 per 1,000 persons

living. In Glasgow the rate was 22·2; and in Edinburgh it was 20·6.

The annual average death-rate represented by the deaths registered last week in the sixteen principal town districts of Ireland was 26·9 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·9 per 1,000, the rates varying from 0·0 in Londonderry, Waterford, Galway, Wexford, Dundalk, and Armagh, to 15·4 in Lisburn—the 9 deaths from all causes registered in the last-named district comprising 3 from measles. Among the 135 deaths from all causes registered in Belfast are 12 from measles (being 4 under the number from that disease in the preceding week), 1 from whooping-cough, 3 from diphtheria, 1 from simple-continued fever, and 2 from diarrhœa. The 45 deaths in Cork comprise 2 from measles, and 1 each from typhus, diphtheria, and diarrhœa. The 7 deaths in Lisburn comprise 1 from measles, and 1 from enteric fever.

In the Dublin Registration District the births registered during the week amounted to 232—108 boys and 124 girls—and the deaths to 187—83 males and 104 females.

The deaths represent an annual rate of mortality of 27·6 in every 1,000 of the estimated population—omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 26·4 per 1,000.

Twenty-four deaths from zymotic diseases were registered, being 2 in excess of the number for the preceding week, but 3 below the average for the fifteenth week of the last ten years. They comprise 3 from measles, 1 from scarlet fever (scarlatina), 1 from typhus, 7 from whooping-cough, 2 from enteric fever, 1 from dysentery, &c.

No cases of small-pox were admitted to hospital during the week, nor were there any small-pox patients discharged. The 8 cases of the disease in hospital at the close of the preceding week remained under treatment on Saturday, April 14.

Eleven cases of scarlatina were admitted to hospital, being 4 over the admissions for the preceding week; 9 patients were discharged during the week, and 54 remained under treatment at its close, being 2 over the number in hospital on Saturday, April 7.

The number of admissions of typhus cases, which had risen from 4 in the week ended March 31 to 12 in the following week, fell to 7 this week. Nine patients were discharged, 1 died, and 49 remained under treatment on Saturday, being 3 under the number in hospital at the close of the preceding week.

There has been a further decline in the mortality from diseases of the respiratory system, the number of deaths from these causes registered last week being 36, or 10 below the average for the corresponding week of

the last ten years, and 4 under the number for the week ended April 7. The 36 deaths comprise 24 from bronchitis, 9 from pneumonia or inflammation of the lungs, and 2 from croup.

In the week ending Saturday, April 21, the mortality in twenty-eight large English towns, including London (in which the rate was 18·9), was equal to an average annual death-rate of 19·9 per 1,000 persons living. In Glasgow the rate was 22·5; and in Edinburgh it was 20·0.

The average annual death-rate in the sixteen principal town districts of Ireland was 26·1 per 1,000 of the population.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·8 per 1,000, the rates varying from 0·0 in Galway, Newry, Drogheda, Dundalk, Sligo, and Armagh, to 14·5 in Lisburn. The 11 deaths from all causes registered in the last-named district comprise 3 from whooping-cough. Among the 127 deaths from all causes registered in Belfast are 9 from measles (being a decrease of 3 as compared with the number in the preceding week), 2 from scarlatina, 2 from whooping-cough, 2 from diphtheria, 1 from simple-continued fever, 1 from enteric fever, and 3 from diarrhœa. The 40 deaths in Cork comprise 3 from measles, 1 from typhus, and 1 from enteric fever; and the 15 deaths in Waterford comprise 2 from typhus.

In the Dublin Registration District the births registered during the week amounted to 173—86 boys and 87 girls—and the deaths to 168—82 males and 86 females.

The deaths represent an annual rate of mortality of 24·8 in every 1,000 of the estimated population—omitting the deaths of persons admitted into public institutions from localities outside the district, the rate was 23·8 per 1,000.

Only 17 deaths from zymotic diseases were registered, being 11 under the average for the corresponding week of the last ten years, and 7 under the number for the week ending April 14. They comprise 3 from scarlet fever (scarlatina), 1 from typhus, 5 from whooping-cough, 1 from diphtheria, 1 from enteric fever, 1 from diarrhœa, &c.

One case of small-pox was admitted to hospital during the week, and 2 patients were discharged. Seven cases of the disease remained under treatment in hospital on Saturday, being 1 under the number at the close of the preceding week.

Nine cases of scarlatina were admitted to hospital, being 2 under the admissions for the preceding week. Ten patients were discharged during the week, and 53 remained under treatment on Saturday, being 1 under the number in hospital on Saturday, April 14.

Only 4 cases of typhus and 1 of enteric fever were admitted, against 7 cases of the former and 3 of the latter disease admitted during the

preceding week. Forty cases of typhus and 15 of enteric fever remained under treatment in hospital at the close of the period.

Forty-four deaths from diseases of the respiratory system were registered, being 8 over the number for the preceding week, but 4 under the average for the sixteenth week of the last ten years. They comprise 30 from bronchitis and 11 from pneumonia or inflammation of the lungs.

Meteorology.

Abstract of Observations made in the City of Dublin, Lat. 53° 20′ N., Long. 6° 15′ W., for the Month of April, 1888.

Mean Height of Barometer, - - -	29·920 inches.
Maximal Height of Barometer (on 6th, at 9 p.m., and on 26th, at 9 a.m.), - - - -	30·350 „
Minimal Height of Barometer (on 30th, at 9 p.m.),	29·137 „
Mean Dry-bulb Temperature, - - -	45·2°.
Mean Wet-bulb Temperature, - -	42·5°.
Mean Dew-point Temperature, - -	39·3°.
Mean Elastic Force (Tension) of Aqueous Vapour, -	·243 inch.
Mean Humidity, - - - - -	80·3 per cent.
Highest Temperature in Shade (on 14th), - -	60·6°.
Lowest Temperature in Shade (on 9th), - -	28·8°.
Lowest Temperature on Grass (Radiation) (on 9th),	22·9°.
Mean Amount of Cloud, - - - -	70·8 per cent.
Rainfall (on 17 days), - - - -	1·993 inches.
Greatest Daily Rainfall (on 30th), - -	·343 inch.
General Directions of Wind, - - -	N.E., W.

Remarks.

A generally cold, cloudy, changeable, showery month, with average atmospherical pressure, and a preponderance of winds from polar points of the compass. In Dublin rain fell on as many as 17 days, but the total amount was only about 2 inches. With the exception of 1879 and 1887, this was the coldest April experienced in Dublin since the present records were commenced in 1860.

In Dublin the mean temperature (45·7°) was decidedly below the average (47·8°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 45·2°. In the twenty-three years ending with 1887, April was coldest in 1879 (the cold year) (M. T. = 44·5°), and warmest in 1865 and 1874 (M. T. = 50·4°). In 1886 the M. T. was 46·3°, and in 1887 it was as low as 45·1°.

The mean height of the barometer was 29·920 inches, or 0·063 inch above the average value for April—namely, 29·857 inches. The

mercury rose to 30·350 inches at 9 p.m. of the 6th, and at 9 a.m. of the 26th, and fell to 29·137 inches at 9 p.m. of the 30th. The observed range of atmospherical pressure was, therefore, 1·213 inches—that is, a little less than one inch and a quarter. The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 45·2°, or 6·3° above the value for March, 1888; that calculated by Kaemtz's formula—viz., *min.* + (*max.* — *min.* × ·41) = *Mean Temp.*—from the means of the daily maxima and minima was 44·7°, or 2·3° below the average mean temperature for April, calculated in the same way, in the twenty years, 1865–84, inclusive (47·0°). The arithmetical mean of the maximal and minimal readings was 45·7°, compared with a twenty-three years' (1865–1887, inclusive) average of 47·8°. On the 14th the thermometer in the screen rose to 60·6°—wind S.; on the 9th the temperature fell to 28·8°—wind N.W. The minimum on the grass was 22·9° on the same date. The rainfall was 1·993 inches, distributed over 17 days. The average rainfall for April in the twenty-three years, 1865–87, inclusive, was 2·034 inches, and the average number of rainy days was 14·8. The rainfall, therefore, was perceptibly below the average, while the rainy days exceeded it. In 1877 the rainfall in April was very large—4·707 inches on 21 days; in 1882 also 3·526 inches fell on 20 days. On the other hand, in 1873, only ·498 of an inch was measured on 8 days, and in 1870 only ·838 inch fell, also on 8 days.

Solar halos were seen on the 9th, 28th, and 29th. The atmosphere was more or less foggy on the 5th and 6th. High winds were noted on no fewer than 15 days, but on only one occasion was the force of a gale attained—namely, on the 30th. Snow or sleet occurred on the 4th and 8th; and hail fell on the 3rd, 4th, 18th, 19th, and 22nd.

During the week ending Saturday, the 7th, the promise of finer weather observed towards the close of the previous month was in part fulfilled, for although the mean temperature was again much below the average for the time of year, the cold winds moderated and some warm sunshine was enjoyed, particularly at the beginning and end of the week. An anticyclone, or area of high atmospherical pressure, prevailed off the West of Ireland, while several depressions of no great depth travelled southwards down the east coast of Great Britain, producing cold showers at intervals. In Dublin cold rain, sleet, and hail fell on Wednesday, the 4th. The mean atmospherical pressure for the week was 30·139 inches, or as much as 0·954 inch above that for the previous week. The barometer fell to 29·848 inches at 9 a.m. of Wednesday, and rose to 30·350 inches at 9 p.m. of Friday. The mean dry bulb temperature was 40·6°—maximum, 51·6° on Monday; minimum, 32·9° on Sunday. Rain fell on 4 days to the amount of ·252 inch, the heaviest rainfall in twenty-four hours being ·139 inch on Tuesday.

A very decided change in the weather occurred early in the second week (8th to 14th inclusive)—low temperature and biting winds gave place to springlike warmth and soft, damp Atlantic or equatorial winds, with genial rains. Sunday, the 8th, indeed, was very cold—the day was ushered in with a fall of cold rain and sleet and closed with a sharp frost. A solar halo, which developed in a thin film of cirro-stratus cloud on Monday forenoon, was the harbinger of a warm air current, which persisted throughout the remainder of the period—the warmth culminating on Saturday, when the thermometer rose to 60·6° in the screen. This was the first occasion in the present season upon which the temperature exceeded 60° in the shade. In Dublin the mean height of the barometer was 29·971 inches—the extremes being, highest, 30·184 inches, at 9 a.m. of Tuesday; lowest, 29·744 inches, at 9 p.m. of Thursday. The mean dry bulb temperature was 46·9°, or 6·3° above that of the previous week (40·6°). The thermometer rose to 60·6° on Saturday, having fallen to 28·8° on Monday. Rain fell in measurable amount on four days—the total precipitation being ·487 inch, and the maximal fall in 24 hours being ·294 inch on Wednesday. The prevalent directions of the wind were N.W. and W.

In the third week (15th to 21st inclusive) the weather was at first fine and springlike, but from Tuesday it was very unsettled and showery or rainy. The type of atmospherical pressure was throughout cyclonic in the British Islands. Until Thursday morning the area of lowest barometer was found permanently off the north-west of Ireland, so that the prevailing winds were S. to S.W. and W. During Thursday and Friday the low pressure system travelled slowly south-eastwards across Great Britain, and in consequence the wind drew into N. and N.E. in Ireland, with a decided fall of temperature, much cloud, rain, and gloom. On Wednesday and Thursday sharp thunder and hailstorms occurred in many parts of the United Kingdom. In Dublin the mean dry bulb temperature was 47·3°; the thermometer rose to 59·4° on Monday and fell to 39·9° on Saturday. The mean height of the barometer was 29·646 inches—the lowest pressure observed being 29·416 inches at 9 a.m. of Wednesday, and the highest being 29·867 inches at 9 a.m. of Saturday. The prevailing winds were at first S.W. and afterwards N.W. to N.E. Rain fell on five days to the amount of ·670 inch; the maximal fall in 24 hours was ·224 inch on Wednesday. Hail fell on Wednesday and Thursday.

In the fourth week (22nd to 28th, inclusive) keen north-easterly winds, low temperature, and cloudy but dry weather prevailed until Friday, when a mild westerly current spread over the country, and some soft rain fell. Saturday was very mild and fine—the S.W. current being fully established. In the east and south-east of England, rain fell heavily during the prevalence of the N.E. winds, but in Ireland the

weather was dry for the most part. In Dublin the barometer was low both at the beginning (29·795 inches) and close (29·747 inches) of the week; but at 9 a.m. of Thursday it read as high as 30·350 inches. The mean amospherical pressure was 30·059 inches. The mean dry bulb temperature, deduced from daily observations at 9 a.m. and 9 p.m., was 45·5°. The thermometer in the screen rose to 58·4° on Saturday, having fallen to 39·1° on Thursday. Rain fell on two days to the amount of ·131 inch. Of this quantity, ·060 inch was measured on Friday, and ·071 inch on Saturday. A little hail fell early on Sunday morning. A parhelion was seen at 5 30 p.m. of Saturday.

The last two days were changeable, and the month closed with a fresh southerly gale and heavy rain, as a deep V-shaped depression advanced over the British Islands from the south-westward.

In Dublin, the temperature fell to or below 32° on only one day in the screen, but on eleven days on the grass. The mean minimal temperature on the grass was 34·6°, compared with 28·7° in March, 29·4° in February, and 31·1° in January. In April, 1887, the mean minimal temperature on the grass was 31·6°.

The rainfall in Dublin during the four months ending April 30th has amounted to 8·090 inches on 58 days, compared with 5·607 inches on 52 days during the same period in 1887, and a twenty-three years' average of 8·488 inches, on 66·2 days.

At Greystones, Co. Wicklow, the rainfall in April, 1888, was 1·40 inches, distributed over only 9 days. Of this quantity, ·51 inch fell on the 30th, ·30 inch on the 17th, and ·24 inch on the 3rd. Since January 1, 8·59 inches of rain have fallen at Greystones, on, however, only 39 days.

POISONING WITH ONE GRAIN OF THE SULPHATE OF ATROPIN.

Dr. Cassius D. Wescott (*Chicago Medical Journal*, March, 1888) reports a case of poisoning by the injection of one grain of the sulphate of atropin by a suicidal maniac who surreptitiously secured the solution, which was prepared for an eye lotion, and drank it. Five hours afterwards, when first seen by Dr. Wescott, he was lying on the floor, unable to speak; his pupils were widely dilated, mouth and tongue very dry, extremities cold, legs paralysed, face pallid; pulse, 120; respirations, 121, shallow and irregular. No delirium occurred whilst the patient was under the influence of the drug. He was put into a warm bed, and got the following mixture :—℞. Tinct. digitalis, ♏ xv.; potassii nitratis, gr. x.; spt. frumenti, ʒ ii.—ft. haustus, statim sumend. He was kept awake until 1 a.m., and at 5 a.m. he got up, dressed, and attended breakfast with the other inmates of the asylum, without having any unpleasant symptom. The dilatation of the pupils persisted for several days.

CLIMATOLOGICAL TABLES FOR THE CITY OF DUBLIN,

Latitude 53° 20′ *N.* ; *Longitude* 6° 15′ *W.* ; *Altitude*, 56 *feet.*

By John William Moore, B.A., M.D., M.Ch., Univ. Dubl.; F.K.Q.C.P.; F. R. Met. Soc.

The materials for these Tables were obtained in the preparation of an Abstract of Observations taken in the City of Dublin during the twenty-three years, 1865–1887, inclusive. This abstract was compiled at the request of M. L. Cruls, the Director of the Imperial Observatory at Rio de Janeiro, Brazil, who has undertaken to prepare a "Dictionnaire Climatologique Universel," the publication of which will be under the care and at the expense of the Observatory of Brazil.

Table I.—*Atmospherical Pressure.*

Year	Mean Height of Barometer	Max. Height of Barometer	Min. Height of Barometer	Annual Range of Pressure
	Inches	Inches	Inches	Inches
1865	29·956	30·860	28·310	2·550
1866	29·869	30·700	28·570	2·130
1867	29·952	30·670	28·600	2·070
1868	29·949	30·670	28·770	1·900
1869	29·950	30·610	28·660	1·950
1870	29·940	30·615	28·587	2·028
1871	29·886	30·538	28·460	2·078
1872	29·737	30·402	28·397	2·005
1873	29·930	30·728	28·345	2·383
1874	29·944	30·866	28·556	2·310
1875	29·964	30·673	28·715	1·958
1876	29·863	30·662	28·448	2·214
1877	29·852	30·700	28·303	2·397
1878	29·921	30·712	28·720	1·992
1879	29·923	30·717	28·820	1·897
1880	29·964	30·676	28·373	2·303
1881	29·910	30·737	28·377	2·360
1882	29·881	30·935	28·718	2·217
1883	29·923	30·802	28·573	2·229
1884	29·942	30·729	28·150	2·579
1885	29·902	30·657	28·413	2·244
1886	29·884	30·776	27·758	3·018
1887	30·015	30·681	28·538	2·143
Means -	29·916	30·701	28·485	2·216

The average annual atmospherical pressure in the 23 years has been 29·916 inches.

The average annual oscillation of atmospherical pressure (barometric range) has been 2·216 inches.

The maximal reading of the barometer in the 23 years was 30·935 inches, on January 18, 1882.

The minimal reading of the barometer in the 23 years was 27·758 inches, on December 8, 1886.

The extreme barometrical range has been 3·177 inches.

TABLE II.—*Temperature, Humidity, Cloud, Rain, and Wind.*

	Temperature			Relative Humidity—Mean Percentage	Cloud—Percentage of	Rain		Wind		Thunder—No. of Times heard	Frosts—32° or less in Screen
	Mean	Mean Max.	Mean Min.			Amount in Inches	Number of Rainy Days	General Directions	Number of Gales		
	°	°	°								
January .	41·3	45·3	37·3	85·4	64	2·241	17·7	SW. & W.	120	3	148
February	43·0	47·2	38·8	84·9	66	2·183	17·3	W. & SW.	94	4	71
March .	43·3	48·2	38·3	81·9	60	2·030	16·4	W. & NW.	96	3	128
April .	47·8	53·6	42·0	79·6	56	2·034	14·8	E. & W.	50	8	14
May .	51·9	58·2	45·5	75·9	55	2·072	15·5	E.	51	17	2
June .	57·8	64·3	51·3	76·8	60	1·839	14·0	W. & NW.	23	33	0
July .	60·8	67·2	54·4	78·0	62	2·350	17·1	W.	29	53	0
August .	59·8	65·9	53·7	81·9	58	2·766	15·3	W.	44	20	0
September	55·8	61·4	50·2	84·3	56	2·288	15·0	W. & SW.	71	10	0
October .	49·8	54·6	44·9	85·5	59	3·111	17·4	NW. & SW.	87	12	12
November	44·5	48·7	40·3	85·9	62	2·340	16·9	W. & NW.	85	7	62
December	41·1	45·1	37·1	85·7	61	2·419	17·0	W. & SW.	119	1	174
	°	°	°	%	%	Inches					
Annual Means	49·8	55·0	44·6	82·2	60	27·673	194·4	W. & S.W. & NW.	869	171	611

The extreme temperatures recorded in the thermometer screen were:—

Highest, 87·2°, on July 16, 1876.

Lowest, 13·3°, on December 14, 1882.

The average relative humidity and the average percentage of cloud are based on 18 years' observations at 9 a.m. and 9 p.m. from 1870 to 1887, both inclusive.

PASSAGE OF A FRACTURED COCCYX PER ANUM.

DR. W. J. JOLLY, Waldo, Fla. (*Med. Rec.*), reports the case of a twenty-one year old primipara, who was in labour. Nothing unusual occurred until the head pressed against the coccyx, which did not yield. The forceps were applied and the woman delivered without perinæum laceration. Immediately after delivery she suffered intense pain in the region of the coccyx, for which an opiate was given. On examination some displacement of the coccyx was found. The opiate soon relieved the pain, and the patient did not suffer any more until the ninth day, except that there was some tenderness in this region. She had some slight pain on that day. On the tenth she passed a bone per anum, which proved to be the lower segment of the coccyx. She has had no trouble since.

PERISCOPE.

THE BRITISH LARYNGOLOGICAL AND RHINOLOGICAL ASSOCIATION.

We observe in the columns of our contemporary, the *British Medical Journal*, the following notice of the above Association :—"*The New Laryngological Society.*—The proposal to establish a society for the study of diseases of the throat and nose, to which we referred some time ago (*Journal*, January 21st, p. 149), has been received with favour by members of the profession specially interested in these subjects. A preliminary meeting was held on April 27th, at the rooms of the Medical Society, under the presidency of Dr. M'Neill Whistler, to whose initiative, seconded by the indefatigable efforts of Dr. R. A. Hayes, of Dublin, the society owes its existence. The following gentlemen, among others, were present:— Drs. Whipham, Woakes, Prosser James, Dundas Grant, Gordon Holmes, J. W. Bond, Coleman Jewell, and Matheson, and Messrs. Lennox Browne, G. H. Bailey, W. R. H. Stewart, G. Stoker, and Arnold Woakes, of London; Mr. Cresswell Baber, of Brighton; Dr. Hunter Mackenzie, of Edinburgh; Dr. M'Intyre, of Glasgow; and the Acting Hon. Secretary. Letters of apology were read from Mr. Sydney Jones and Dr. Norris Wolfenden. It was stated that there had already been fifty-one applications for original membership, the list including the names of nearly all the prominent laryngologists in Great Britain and Ireland. It was unanimously resolved that a 'British Laryngological and Rhinological Association' should be established, and the first general meeting for the election of officers was fixed for Friday, June 29th. The Acting Secretary, Dr. R. A. Hayes, 56 Merrion-square, South, Dublin, will be happy to give every information relative to the Association to any gentleman interested in it."

ABDOMINAL SECTION FOR PERFORATED TYPHOID ULCER.

Dr. T. G. Morton reports a case of the above in the *Medical News* of December 24th, 1887. The patient was a man aged twenty-three, in good physical condition. The operation was performed twenty-four hours after the perforation. The abdomen was opened in the median line, and a perforation discovered about three feet from the ileo-cæcal valve. It was about three-eighths of an inch in diameter, and occupied the lower end of a large ulcerated patch. The ulcer was closed by turning the whole area of the ulceration into the bowel by eight Lembert sutures. The ulcers in the bowel were seen outlined in the peritoneal surface by a deep dusky-red slightly swollen area. One looked as if it would soon perforate, so also was turned in by Lembert sutures. The

abdomen then was thoroughly cleansed with water and the abdominal wound closed. The patient died collapsed six hours after the operation. Only two other such cases are on record, viz.—the first performed by Kussmaul, of Strassburg, in October, 1885. In this case the ulcer was excised; patient died eleven hours after. The second case was under the care of Mr. Bartleet, of Birmingham. In this case the point of perforation was not found, so the cavity of the abdomen was washed out and a drain inserted; patient died two days after.—*Canada Medical and Surgical Journal*, March, 1888.

MEZZOTINT PORTRAITS OF EMINENT PHYSICIANS AND SURGEONS.

MESSRS. W. A. MANSELL & Co., the Fine Art publishers and photographers, of 271 and 273 Oxford-street, London, W., have forwarded a proof copy of one of the series of mezzotint portraits of distinguished members of the profession, which that firm is at present publishing. The plates have been made by Mr. Robert S. Clouston, who has been afforded special facilities to obtain good and characteristic portraits, and the trial proofs have been approved and signed in each case. The plates, which are $11\frac{1}{2} \times 9$ inches, are printed in brownish black, upon plate paper of the size of 27×20 inches. The artist's proofs, upon India paper, with facsimile of signature, are now ready, and cost one guinea each. They are limited to 200 impressions of each subject. In addition to these, prints upon plate paper, with engraved title, will be ready shortly, price half a guinea each. The portraits already executed are those of Sir Andrew Clark, Bart., President of the Royal College of Physicians of London; Sir William Gull, Bart.; Sir Joseph Lister, Bart.; Sir Henry Thompson, and Sir Spencer Wells, Bart. Sir Henry Thompson's portrait, which has reached us, is a striking likeness and an admirable work of art. Messrs. Mansell supply frames at reasonable prices for these portraits, which cannot fail to be attractive to the medical world.

AN ANALYSIS OF NINETY-THREE CASES OF WRITERS' CRAMP AND IMPAIRED WRITING POWER; MAKING, WITH SEVENTY-FIVE CASES PREVIOUSLY REPORTED, A TOTAL OF ONE HUNDRED AND SIXTY-EIGHT CASES.

IN this valuable paper Dr. G. V. Poore classifies his cases into three groups. I. *The paralytic group*, including 20 cases.—1 due to lead-poisoning, 2 to pressure on nerves, and the remainder due, probably, to old cerebral paralysis. The necessity of looking for slight hemiplegia, or cortical brachial monoplegia, in all cases of difficulty in writing is strongly insisted on. II. *The degenerative group.*—2 of disseminated sclerosis, 3 of posterior sclerosis, 2 of paralysis agitans, 2 of lateral sclerosis, 5 of muscular atrophy and fibrillary tremor, 1 of general paralysis, 1 of marked tremor of right hand and foot, 1 of emotional weakness and colour-blindness, 3 of rheumatic thickening of finger-joints or muscles, 1 of gout, and 2

of alcoholism. III. *Neuro-muscular group*, including all those which were not marked by symptoms pointing to lesions of nerve centres.—The most important objective symptoms presented by the members of this group were—(*a*) tenderness of one or others of the nerves of the arm, most commonly the median; (*b*) changed Faradic irritability of muscles, most commonly the interossei, supplied by ulnar nerve; (*c*) tremor. In 13 cases nerve tenderness was present without change in muscular irritability; in 21 cases changes of muscular irritability without nerve tenderness; and in 32 both of these symptoms were combined. In regard to its cause, it appears that nerve tenderness may be functional (neuralgic), central, peripheral, due to cold, rheumatism, inflammation, muscular exertion, or toxic from lead, alcohol, gout, &c. It is supposed that when the interossei, the muscles of pen prehension, fail, the bigger muscles, as the superficial and deep flexors of fingers and long flexor of thumb, take their place, and the tenderness of the median nerve is due to the over-use of these muscles supplied by it. While tremor was common, occurring in 87 out of the 168 cases, nervous spasm was rare. The methods of treatment which gave some success were—1. Improvement of the general health by diet, regulation of the bowels, and administration of tonics and alteratives, particularly arsenic. 2. Application of counter-irritants over painful nerve-trunks. 3. Promotion of circulation and nutrition in affected limb by means of massage, hot baths, and electricity. Massage must not be employed while there is any tenderness of nerve-trunks. As an appendix to the paper is a series of well-arranged tables giving the details of the ninety-three cases here recorded.—*Medico-Chirurgical Transactions*, Vol. LXX.

DIARRHŒA OF BABIES.

Dr. J. Winter recommends from five to six teaspoonfuls of the following mixture to be given daily to babies suffering from green diarrhœa. The frequency and the quantity of the medicine will depend on the age of the baby, and the severity of the attack. The dose is best given about a quarter of an hour after giving the breast:—℞. Acidi lactici, 2 grammes; aquæ, 80 grammes; syrupi, 20 grammes; mix.—*Gazette Hebdom. de Med. et de Chir.*

TUMOURS OF THE LARYNX.

M. Tillaux communicated a paper at the meeting of the French Academy of Medicine, on the 22nd of November, 1887, on the palliative treatment of endo-laryngeal tumours, and narrated the following case:—A man, aged twenty-five, with a sessile tumour on the superior surface of his right vocal cord, which had attachments to the inner surface of the cartilage, suffered from extreme dyspnœa, aphonia, and weakness, and had lost flesh rapidly. On the 29th of June tracheotomy was performed without any

anæsthetic; and on the 13th of July the man left hospital, having gained three and a half kilos in weight, with a good appetite, and full of hope. The nature of the tumour is not stated.—*Bulletin de Médecine*, November 23, 1887.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Soluble Saccharin.

Ordinary saccharin is comparatively insoluble, and so it is inconvenient to the physician to prescribe and to the patient to handle. Messrs. Burroughs, Wellcome, & Co., of Snow-hill Buildings, London, E.C., have therefore devised a soluble form of saccharin, which they dispense in a very portable form in a small flat bottle, which can be carried in the waistcoat pocket. Attached to the cork of the bottle is a tiny measuring spoon. A measureful of the powdered saccharin will sweeten a small cup of tea or coffee. This soluble saccharin is supplied to the consumer at half-a-crown a bottle.

Tabloid Triturates.

The same firm have sent for inspection a sample of their Tabloid Triturates—that, namely, of tincture of aconite. Each tabloid consists of an intimate mixture of one minim of the Pharmacopœial tincture with sugar of milk.

There has been considerable discussion on the subject of triturations during the past few years, in which discussion Drs. Lauder Brunton, Phillips, Murrell, Bird, and others have participated

Messrs. Burroughs, Wellcome, & Co. claim for their tabloid triturates (which are put up in small, very portable screw-metal-cap, oval bottles) the following advantages:—

1. The absolute purity and uniformity of the drug.
2. The absolute accuracy of dosage, and
3. That they offer the most pleasing and palatable form for the administration of the nauseous drugs usually administered in the form of tinctures and powders.

Zyminised Suppositories for Rectal Feeding.

Messrs. Burroughs, Welcome, & Co. have submitted to us a specimen of their recently perfected zyminised suppositories. They are of two kinds—one kind being made of milk, the other of meat. As now prepared these suppositories are as well adapted for use in infants as in adults. They are easily introduced, retained without their presence being noticed, and possess advantages over nutrient enemata in that

they do not excite rectal intolerance even after being administered for weeks. They are of admirable consistence, are perfectly preservable, and have sustained life for many weeks in affections of the œsophagus and stomach, where feeding otherwise than by the rectum was quite out of the question. They are, of course, likewise invaluable in certain conditions, where it is requisite that the abdomen should be kept quiescent. The zyminised milk suppositories represent the entire nutritive value of five drachms of milk, and the zyminised meat suppositories that of half an ounce of the best fresh beef.

Concentrated Liquors.

Towards the close of 1887, Messrs. Fletcher, Fletcher, and Stevenson, the well-known manufacturing chemists, of Holloway, London, N., introduced a new series of liquors for the extemporaneous production of decoctions, infusions, tinctures, and syrups.

The principle of the process will be understood from an account of experiments with the concentrated liquors in the *Chemist and Druggist* for December 3, 1887. We give two of the experiments :—"One volume of the Liquor Aurantii Co. was diluted with 19 volumes of water, and the mixture compared with fresh-made compound infusion of orange. The 'Liquor' infusion was clearer than the fresh infusion, but the colour was identical, and the flavour of the orange was as delicate as in the fresh infusion."

Again—"The Tincture Liquors were equally satisfactory. For example :—

Tinct. Rhei Co.

(1) Made from liquor, s.g. 0·941, solid residue (1 oz. tincture), 14 grs.
(2) A commercial specimen, s.g. 0·943, „ „ „ 15 „

The colour of No. 1 was somewhat lighter than No. 2, but otherwise both were as alike as two samples of tinctures generally are."

We are informed that the method of production is that of cold re-percolation, conducted with the most perfect appliances. The drugs used are of the purest quality, and the strength of the finished product is most accurately determined and brought to the Pharmacopœial standard.

INDEX

TO THE EIGHTY-FIFTH VOLUME.

Abdominal section—for wound of stomach, Dr. C. B. Ball's successful case of, 357—for perforated typhoid ulcer, 556.
Abercrombie, the Hon. Ralph, Weather, *Rev.*, 148.
Abscesses, multiple, of liver and lungs, Dr. Finny's case of, 367.
Academy, Royal, of Medicine in Ireland, 75, 172, 259, 353, 438, 521—transactions of the, *Rev.*, 329.
Aitken, Sir William, on the animal alkaloids, *Rev.*, 50,
Albuminuria, cyclic, 192.
Albuminuric retinitis, 70.
Alcohol—in high altitudes, 352—deaths from, 380.
Alkanna for myelin-staining, 517.
Amenorrhœa, potassium permanganate in, 85.
American Medical Association, journal of the, *Rev.*, 423.
American Physicians and Surgeons, Congress of, 474.
American Physicians, Transactions of the Association of, *Rev.*, 253.
Anæmia of puberty, Dr. E. MacDowel Cosgrave on, 442.
Anatomy and Physiology, Monthly Journal of, *Rev.*, 159.
Anophthalmos, Mr. Neary's case of bilateral, 259.
Antiseptic, a new, 74.
Archives de Tocologie, 192.
Archives Roumaines de Médecine et de Chirurgie, *Rev.*, 244.
Argyria, or argyriasis, by Dr. A. W. Foot, 172, 293.
Army Medical Department, report for 1885, *Rev.*. 59.
Aspiration, accidents attending, 379.
Aspirator needle, fatal internal hæmorrhage from, 94.
Association, the British Laryngological and Rhinological, 556.
Ataxia, progressive spastic, 290.
Ataxic paraplegia, Dr. C. J. Nixon's case of, 196, 265.
Atkins, Dr. Ringrose, report on nervous and mental disease, 507.
Atropin, sulphate of, poisoning with, 553.
Atthill, Dr. Lombe, specimen of suppurating ovarian cyst, 353.

Babies—mortality of, 475—diarrhœa of, 558.
Ball, Dr. Charles, successful abdominal section in penetrating wound of stomach, 357.
Barker, Mr. A. E., manual of surgical operations, *Rev.*, 333.
Basil, Mr. M. H., commoner diseases and accidents, *Rev.*, 161.
Beiträge zur pathologischen Anatomie und Physiologie, *Rev.*, 326.
Benson, Mr. Arthur H., report on ophthalmic surgery, 66.
Beri-Beri of Ceylon, by Mr. Kynsey, *Rev.*, 138.
Bernard, Mr. Walter, case of cerebro-spinal disease. 364.
Bibliotheca Medico-Chirurgica, *Rev.*, 162.
Bidenkap, Dr. J. L., Lectures on Lepra, *Rev.*, 65.
Billings, Surgeon John S., report on the mortality and vital statistics of the United States, *Rev.*, 504.
Bleeding in sunstroke, 380.
Blisters in infancy, 346.
Boston, twenty-third report of the city hospital, *Rev.*, 420.
Bowlby, Mr. Anthony A., surgical pathology, *Rev.*, 143.
Brain—disease, trephining in, 75—anatomic changes of the, in senile dementia, 430—sections of the, 518.
Bridger, Dr. Adolphus E., biliousness, *Rev.*, 346.
British Laryngological and Rhinological Association, 556.
Bromo-iodine waters of Woodhall Spa, Lincolnshire, 289.
Brooklyn Medical Journal, *Rev.*, 423.
Brown, Dr. A. M., treatise on the animal alkaloids, *Rev.*, 47.

Browne, Dr. J. Walton, strangulated hernia, 24.
Browne, Mr. Lennox, throat and its diseases, *Rev.*, 55—growths of the larynx, 95.
Buist, Dr. John B., vaccinia and variola, *Rev.*, 52.
Burroughs, Wellcome, & Co., new preparations, 559.

Cameron, Sir Charles A., the distribution of enteric fever in Dublin, 447.
Canary Islands, *Rev.*, 191.
Carcinoma gastri, Mr. Alfred F. Penny's case of, 273.
Cardiac pathology, physiological basis for an improved, 520.
Carlow County Infirmary, report of the, *Rev.*, 337.
Carpenter, Dr. Alfred, school hygiene, *Rev.*, 63.
Carter, Mr. Brudenell, ophthalmic surgery, *Rev.*, 256.
Cassell's Yearbook of Treatment for 1888, *Rev.*, 343.
Cataract extraction, 68.
Cerebral cyst, Mr. Kendal Franks on a case of, 97, 173.
Cerebro-spinal disease, Mr. W. Bernard's case of, 364.
Ceylon Medical Journal, *Rev.*, 422.
Chemistry, Watts' Dictionary of, *Rev.*, 501.
Chloroform narcosis, puncture of the heart in, 429.
Cirrhosis of the liver. 46.
Clark, Mr. Andrew, Fairlie Clarke's Manual of Surgery, *Rev.*, 142.
Classification of skin diseases, Mr. G. E. J. Greene on, 495.
Climatological tables for Dublin, by Dr. J. W. Moore, 554.
Clinical records, by Mr. Penny, 273.
Coachford poisoning case, medico-legal aspects of the, Dr. C. Y. Pearson on, 212—discussion, 268.
Cocaïn—habit, suicide in, 380—in zoster and pruritus ani, 380—poisoning by, 436.
Coin in the larynx, 464.
Collective Investigation Committee of Norway, Report, *Rev.*, 57.
Collie, Dr. Alexander, on fevers, *Rev.*, 63.
Collis, the late Mr. Maurice, flap-splitting in plastic operations, 381.
Communicated insanity, 507.
Concentrated liquors, 560.
Congenital spastic paralysis, Dr. C. J. Nixon's case of, 193.
Congress of American physicians and surgeons, 474.
Consumption, pulmonary, Dr. Williams on, *Rev.*, 316.
Corley, Dr. A. H., presidential address to the Section of Surgery of the Royal Academy of Medicine, 75.
Corpora striata, minute structure of the, 512.
Cosgrave, Dr. E. MacDowel, anæmia of puberty, 442.
Cramp, writers', analysis of cases of, 557.
Cyclic albuminuria, 192.
Cyclopia, Mr. Knott's abstract of Hannover's paper on, 454.
Cystitis, chronic, saccharin in, Dr. James Little on, 493—discussion, 542.
Cystotomy, suprapubic, Dr. F. T. Heuston on, 533.
Cysts, ovarian, exhibitions of, 353, 354.

Debate, on Indian Medical Service, in Parliament, *Rev.*, 165.
Dementia, senile, changes in the brain in, 430.
Diarrhœa—infantile, 378—sodium phosphate in, 476—of babies, 558.
Diseases of women, Mr. Horne's report on, 167, 347.
Dislocation of the scapula, 497.
Distin-Maddick, Mr. E., stricture of the urethra, *Rev.*, 338.
Dobell, Dr. Horace, intelligence in the van, *Rev.*, 251.
Dougall, Dr. John, artificial cultivation of vaccine lymph, *Rev.*, 54.
Drugs, tolerance of, 380.
Dublin—the distribution of enteric fever in, by Dr. Grimshaw and Sir Charles A. Cameron, 447—climatological tables for, by Dr. J. W. Moore, 554.
Dysentery, pathology of—by Mr. Conolly Norman, 263, 362—Dr. Walter G. Smith on, 263—Dr. Purser on, 263—Dr. James Little on, 263.
Dysmenorrhœa, obstructive, Dr. More Madden on, 297.
Dyspepsia, infantile, 476.

Ellis, Mr. George E. R., practical organic analysis, *Rev.*, 426.
Ems, the springs and baths of, Dr. Quinlan on, 408.
Endometritis, treatment of, 348.
Enterectomy and enterorrhaphy, by Mr. M'Ardle, 1, 123.
Enteric fever—in Dublin, the distribution of, Dr. Grimshaw and Sir Charles Cameron on, 447—in a man aged 61 years, 412.
Enterorrhaphy, Mr. M'Ardle on, 1, 123.
Epidemics, recent works on, *Rev.*, 163.
Epilepsy—ocular symptoms in, 71—gastric, Dr. A. W. Foot on, 384, 445.
Epithelioma, pyrogallic acid in, 380.
Equino-varus, treatment of advanced, by Mr. R. L. Swan, 438.

Examination papers for the Indian and Naval Medical Services, 291.
Eye, action of drugs upon the, 66.

Fagan, Mr. John, treatment of mammary tumours, 13.
Fenwick, Dr. Samuel, the saliva as a test in liver disorders, *Rev.*, 156.
Fever—of over-exertion, Dr. J. F. Knott on the, 83—typhoid, treatment of, 369—in Dublin, by Dr. Grimshaw and Sir Charles Cameron, 447.
Finny, Dr. J. Magee, multiple abscesses of the liver and lungs, 367.
Fistula in ano, 473.
FitzGerald, Dr. C. E., congenital microphthalmos, 259.
Flap-splitting in plastic operations, Mr. Lawson Tait on, 381.
Fletcher, Fletcher, and Stevenson, concentrated liquors, 560.
Flinn, Mr. D. Edgar, Glengarriff as a winter health resort, 401.
Foot, Dr. A. W., argyriasis, 172, 293—gastric epilepsy, 384, 445.
Forensic medicine, report on, by Dr. H. C. Tweedy, 430.
Fothergill, Dr. J. Milner, the practitioner's handbook of treatment, *Rev.*, 252.
Fox, the late Dr. Wilson, 94.
Foy, Mr. George, surgery of the thyroid gland, 239, 440—hypnotism, 450.
Fracture of body of scapula, 475.
Franks, Mr. Kendal, case of cerebral cyst, 97, 173—supra-pubic lithotomy and vesical suture, 477, 532.
Frost, Mr. William Adams, ophthalmic surgery, *Rev.*, 256.
Furnell, Dr. M. A., cholera and water in India, *Rev.*, 164.

Ganglion cells, changes produced in, by hardening reagents, 517.
Gaseous enemata in phthisis, 286.
Gastric—carcinoma, Mr. Alfred F. Penny on, 273—epilepsy, Dr. A. W. Foot on, 384—discussion, 445.
Gazette Hebdomadaire de Médecine de Paris, *Rev.*, 425.
Gestation, protracted, 272.
Gland, thyroid, surgery of the, Mr. George Foy on the, 239, 440.
Glaucoma, 68.
Glengarriff as a winter health resort, by Mr. D. Edgar Flinn, 401—discussion, 451.
Gordon, Surgeon-General C. A., M. Pasteur's treatment of rabies and hydrophobia, *Rev.*, 336.
Greene, Mr. G. E. J., pemphigus foliaceus treated with ichthyol, 495.
Grimshaw, Dr., the distribution of enteric fever in Dublin, 447.
Grübelsucht, Mr. Conolly Norman on, 542—discussion on, 543.
Gynæcological department of the Rotunda Hospital, Dr. Alfred J. Smith's report of the, 392.

Hæmatocele—peri-uterine, 169—pudendal, Dr. Purefoy on, 356.
Half-yearly reports—ophthalmic surgery, by Mr. A. H. Benson, 66—midwifery and diseases of women, by Mr. A. J. Horne, 167, 347—forensic medicine, by Dr. H. C. Tweedy, 430—nervous and mental disease, by Dr. Ringrose Atkins, 507.
Hand and arm in professional acts, 476.
Hannover, Professor, cyclopia, 454.
Harris, Dr. Vincent Dormer, manual for the physiological laboratory, *Rev.*, 64.
Hartridge, Mr. Gustavus, the refraction of the eye, *Rev.*, 258.
Headache, migranous, Dr. James Little on relief of, 489—discussion, 539.
Heart—suicidal wound of, with a pin, Mr. W. Thomson's case of, 365—puncture of, in chloroform narcosis, 429.
Heath, Mr. Christopher, lectures on diseases of the jaws, *Rev.*, 331.
Heredity in hæmorrhagic purpura, by Dr. J. F. Knott, 267.
Hermaphrodism, 435.
Hernia, strangulated, Dr. J. Walton Browne, 24.
Heuston, Dr. F. T., vesical tumour removed by supra-pubic cystotomy, 533.
Hoblyn, Mr. R. D., dictionary of medical terms, *Rev.*, 344.
Horne, Mr. Andrew J., report on midwifery and diseases of women, 167, 347—placental cyst, 354.
Horny growth of penis, 315.
Hospitals in Dublin, Dr. Mapother on, 110.
Hospital reports, *Rev.*, 420, 421.
Hutchinson, Mr. Jonathan, illustrations of clinical surgery, *Rev.*, 144.
Hydrostatic pressure in intussusception, 506.
Hymen as a proof of virginity, Dr. Kinkead on, 521.
Hypnotism, Mr. G. M. Foy on, 450.
Hysterectomy, vaginal, 349.

Ichthyol in pemphigus foliaceus, Mr. Greene on, 495.
Index-Catalogue of the library of the Surgeon-General's Office, U.S.A., *Rev.*, 166.
Indian Medical Service—debate on, in Parliament, *Rev.*, 165—examination papers, 291.
Infancy, blisters in, 346.

Infantile — dyspepsia, 476 — mortality, 475—paralysis, by Mr. Tobin, 262—diarrhœa, 378, 476.
Innere Medicin, der siebente Congress für, 287.
Insane in Italy, 171.
Insanity—puerperal, 431—in general, report on, 507—communicated, 507.
Internal hæmorrhage from the aspirator needle, 94.
Intubation of larynx, dangers of. 544.
Intussusception relieved by hydrostatic pressure, 506.
Ireland—Royal Academy of Medicine in, 75, 172, 259, 353, 438, 521—transactions of the, *Rev.*, 329—Royal University of, *Rev.*, 341.
Islands, the Canary, 191.
Italy, insane in, 171.

Jenks, the William F., memorial prize, 287.
Jones, Mr. Thomas, diseases of the bones, *Rev.*, 498.
Journal of the Scottish Meteorological Society, *Rev.*, 153.

Keetley, Mr. C. B., index of surgery, *Rev.*, 342.
Khory, Dr. Rustomjee N., Bombay materia medica, *Rev.*, 425.
King, Dr. A. F. A., manual of obstetrics, *Rev.*, 155.
Kinkead, Dr., the hymen as a proof of virginity, 521.
Knott, Dr. J. F., the fever of over-exertion, 83—heredity in hæmorrhagic purpura, 267—abstract of Professor Hannover's paper on cyclopia, 454.
Kynsey, Mr. W., report on anæmia of Ceylon, *Rev.*, 138.

Lahousse, Dr. E., sur l'ontogenése du cervelet, *Rev.*, 157.
Lancet, Manitoba, North-West and British Columbia, *Rev.*, 247.
Laryngological and Rhinological Association, the British, 556.
Larynx—benign and malignant growths of the, 95—coin in the, 464—dangers of intubation of, 544—tumours of the, 558.
Lee, Mr. Henry, on the tapetum lucidum, *Rev.*, 426.
Ligature of the vertebral artery, 74.
Liquors, concentrated, by Messrs. Fletcher and Stevenson, 560.
Lithotomy, supra-pubic—Mr. Kendal Franks on, 477—Mr. F. Alcock Nixon on, 532.
Little, Dr. James, dysenteric ulceration, 263 —relief of migranous headache, 489, 539—saccharin in chronic cystitis, 493, 542.
Liveing, Dr. Robert, handbook of diseases of the skin, *Rev.*, 252.
Liver—cirrhosis of the, 46—multiple abscesses of, Dr. Finny's case of, 367.
London Temperance Hospital report, *Rev.*, 421.
Lungs, multiple abscesses of, Dr. Finny's case of, 367.
Lymphadenoma, Dr. W. M. Wright on, 81, 106.
Lymphosarcoma, removal of, 173.

Macan, Dr. A. V., exhibition of ovarian cysts, 354—vaginal extirpation of the uterus, 526.
M'Ardle, Mr. J. S., enterectomy and enterorrhaphy, 1, 123—œsophagotomy, 310.
MacCormac, Sir William, on abdominal section in intraperitoneal injury, *Rev.*, 340.
M'Mordie, Dr., uterine hæmorrhage from cystic ovary, 354.
Mammary tumours, treatment of, Mr. John Fagan on, 13.
Manitoba, North-West and British Columbia Lancet, *Rev.*, 247.
Mansell, Messrs., mezzotint portraits, 557.
Mapother, Dr., our hospitals, 110.
Maryland, transactions of the medical faculty of the State of, *Rev.*, 418.
Massachussetts Medical Society, medical communications of the, *Rev.*, 417.
Mayne, Mr., brain symptoms following pyæmia, 75.
Measles in a patient 70 years of age, 96.
Medical and surgical report of the Tyrone County Infirmary for 1886, *Rev.*, 255.
Medical Annual and Practitioner's Index for 1888, *Rev.*, 427.
Medical—education and examinations in 1887, Dr. J. W. Moore on, 36—Department, Army, report of the, *Rev.*, 59.
Medicin, der siebente Congress für innere, 287.
Medicine in Ireland, Royal Academy of, 75, 172, 259, 353, 438, 521—transactions of the, *Rev.*, 329.
Medicine, Section of, in the Royal Academy of Medicine in Ireland, 81, 172, 265, 442, 539.
Medico-legal aspects of the Coachford poisoning case, Dr. C. Y. Pearson on the, 212.
Menstruation, changes of the field of vision in, 73.
Mental disease, Dr. R. Atkins' report on, 507.
Meteorological notes, 91, 186, 283, 375, 470, 550.
Meteorology, recent works on, *Rev.*, 147.
Mezzotint portraits, 557.

Microphthalmos, congenital, Dr. Fitz-Gerald's case of, 259.
Middlesex Hospital Reports, *Rev.*, 421.
Midwifery and diseases of women, Mr. Horne's report on, 167, 347.
Migranous headache, relief of, Dr. James Little on, 489—discussion, 539.
Mistletoe, 474.
Molony, Mr. M. J., rupture of the perinæum, *Rev.*, 65.
Monthly International Journal of Anatomy and Physiology, *Rev.*, 159.
Montreal Victoria Hospital, 243.
Moore, Dr. Charles F., on State Medicine, 203, 268.
Moore, Dr. J. W., medical education and examinations in 1887, 36—sanitary and meteorological notes, 86, 181, 278, 370, 465, 545—climatological tables for Dublin, 554.
More Madden, Dr., treatment of sterility and obstructive dysmenorrhœa, 297.
Morley, Dr. H. Forster, Watts' Dictionary of Chemistry, *Rev.*, 501.
Mortality of babies, 475.
Muir, Mr. M. M. Pattison, Watts' Dictionary of Chemistry, *Rev.*, 501.
Mundé, Dr. Paul F., management of pregnancy, parturition, and the puerperal state, *Rev.*, 162.
Munk, Dr. William, euthanasia, *Rev.*, 146.

Napoli, Annali Clinica dell' Ospedale degl' Incurabili in, *Rev.*, 422.
Narcosis, chloroform, puncture of the heart in, 429.
Naval Medical Service examination papers, 291.
Neary, Mr., bilateral anophthalmos, 259.
Nervous and mental disease, Dr. R. Atkins' report on, 507.
Neuro-anatomy and physiology, report on, 512.
New preparations and scientific inventions, 96, 559.
New York Academy of Medicine, *Rev.*, 419.
New York State Medical Association, transactions of the, *Rev.*, 248.
New Zealand Medical Journal, *Rev.*, 245.
Nixon, Dr. C. J., congenital spastic paralysis, and ataxic paraplegia, 193, 265.
Nixon, Mr. F. Alcock, on suprapubic lithotomy, 532.
Norman, Mr. Conolly, cases of dysentery, 263, 362—case of Grübelsucht, 542.
Norwegian Collective Investigation Committee Report, *Rev.*, 57.

Obstetrics, Section of, in the Royal Academy of Medicine in Ireland, 353, 521.
Obstructive dysmenorrhœa, Dr. More Madden on, 297.
O'Callaghan, Mr. R. T., report of the Carlow County Infirmary for 1887, *Rev.*, 337.
Ocular symptoms in epilepsy, 71.
Œsophagotomy, Mr. J. S. M'Ardle on, 310.
Œsophagus, foreign body in the, Mr. Thomson's case of, 359.
Oil, porpoise, 286.
Ophthalmia neonatorum, 67.
Ophthalmic surgery, report on, by Mr. A. H. Benson, 66.
Optic thalami, minute structures of, 512.
Ovarian cysts, 353, 354.
Over-exertion, fevers of, Dr. Knott on, 83.

Pal's method of staining nerve tissue, 515.
Paralysis—congenital spastic, Dr. C. J. Nixon's case of, 193, 265—infantile, Mr. Tobin on, 262.
Paraplegia, ataxic, Dr. C. J. Nixon's case of, 196, 265.
Paris, Gazette Hebdomadaire de Médecine de, *Rev.*, 424.
Parkin, Dr. John, volcanic origin of epidemics, *Rev.*, 163—are epidemics contagious? *Rev.*, 339.
Pathology, Section of, in the Royal Academy of Medicine, 259, 362.
Pearson, Dr. C. Y., medico-legal aspects of the Coachford poisoning case, 212—discussion, 268.
Pemphigus foliaceus, ichthyol in, Mr. Greene on, 495.
Penis, horny growth of, 315.
Penny, Mr. Alfred F., case of carcinoma gastri, 273.
Periodicals, recent, *Rev.*, 416.
Periscope, 94, 191, 286, 379, 473, 556.
Peri-uterine hæmatocele, 169.
Philadelphia Medical and Surgical Reporter, *Rev.*, 424.
Phthisis—gaseous enemata in, 286—Williams on, *Rev.*, 316.
Physiology, Monthly Journal of Anatomy and, *Rev.*, 159.
Piano-playing, 476.
Pinol, 96.
Pneumothorax, Dr. Walter Smith's case of, 442.
Poisoning—by cocaïn, 436—case, medico-legal aspects of the Coachford, by Dr. C. Y. Pearson, 212—discussion, 268—by sulphate of atropin, 553.
Poisons, post mortem imbibition of, 435.
Polyclinic, the, *Rev.*, 422.
Poore, Dr. G. V., on writers' cramp, 557.
Porpoise oil, 286.
Portraits, mezzotint, 557.
Potassium permanganate in amenorrhœa, 85.

Power, Dr. D'Arcy, manual for the physiological laboratory, *Rev.*, 64.
Pratt, Mr. J. Dallas, trephining in brain disease, 75.
Pregnancy, ruptured tubal, 347.
Price, Dr. John A. P., Hoblyn's Dictionary of Medical Terms, *Rev.*, 344.
Prize, the William F. Jenks memorial, 287.
Progressive spastic ataxia, 290.
Pruritus ani, cocaïn in, 380.
Ptomaines and leucomaines, *Rev.*, 47.
Puberty, anæmia of, Dr. E. MacDowel Cosgrave on, 442.
Pudendal hæmatocele, Dr. Purefoy on, 356.
Puerperal insanity, 431.
Puncture of heart in chloroform narcosis, 429.
Pupil, width of, in internal diseases, 73.
Purefoy, Dr., on pudendal hæmatocele, 356.
Purpura, heredity in hæmorrhagic, Dr. J. F. Knott on, 267.
Purser, Dr., dysentery, 263.
Pyrogallic acid in epithelioma, 380.

Quinlan, Dr. F. J. B., the springs and baths of Ems, 408.

Rainfall in Dublin during 1887, 189.
Records, clinical, 273.
Report—of the Norwegian Collective Investigation Committee, *Rev.*, 57—of the Army Medical Department for 1885, *Rev.*, 59—of the Meteorological Council of the Royal Society, *Rev.*, 154—of the Carlow County Infirmary for 1887, *Rev.*, 337—of the Gynæcological Department of Rotunda Hospital, by Dr. A. J. Smith, 392.
Reports, half-yearly—on ophthalmic surgery, by Mr. A. H. Benson, 66—on midwifery and diseases of women, by Mr. Andrew J. Horne, 167, 347—forensic medicine, by Dr. H. C. Tweedy, 430—nervous and mental disease, by Dr. Ringrose Atkins, 507.
Retinitis, albuminuric, 70.
Retroflection of the uterus with adhesions, treatment of, 351.
Revue Medico-Pharmaceutique, *Rev.*, 345.
Reynolds, Professor J. Emerson, experimental chemistry, part iv., *Rev.*, 145.
Rhinological Association, the British Laryngological and, 556.
Riforma Medica, La, *Rev.*, 425.
Roland, Dr. E., L'Épilepsie Jacksonienne, *Rev.*, 429.
Roma, Bulletino della Reale Accademia Médica de, *Rev.*, 423.
Roose, Dr. Robson, gout, *Rev.*, 160.
Rotunda Hospital, report of Gynæcological Department for 1887, 392.
Royal Academy of Medicine in Ireland, 75, 172, 259, 353, 438, 521—transactions of the, *Rev.*, 329.
Royal University of Ireland Calendar for 1888, *Rev.*, 341.
Ruptured tubal pregnancy, 347.

Saccharin—in chronic cystitis, Dr. James Little on, 493—discussion, 542—soluble, 559.
Sacramento Medical Times, *Rev.*, 423.
Sanitary and meteorological notes, by Dr. J. W. Moore, 86, 181, 278, 370, 465, 545.
Sarcoma, 379.
Scapula—fracture of the body of the, 475.—dislocation of the, 497.
Scleroses, combined, of spinal cord, 290.
Scottish Meteorological Society, Journal of the, *Rev*, 153.
Scott, Mr. Robert H., weather charts and storm warnings, *Rev.*, 151.
Senile dementia, the brain in, 430.
Sewill, Mr. Henry, dental caries, *Rev.*, 413.
Silver staining, Dr. A. W. Foot on, 172, 293.
Skin diseases, classification of, Mr. Greene on, 495.
Smith, Dr. Alfred J., report of the gynæcological department of the Rotunda Hospital for 1887, 392.
Smith, Dr. Walter G., dysentery, 263—case of pneumo-thorax, 442.
Sodium phosphate in infantile diarrhœa, 476.
Soluble saccharin, 559.
Spastic—paralysis, congenital, Dr. C. J. Nixon on, 193—ataxia, progressive, 290.
Spa, waters of Woodhall, 289.
State Medicine—address on, by Dr. C. F. Moore, 203—Section of, in the Royal Academy of Medicine, 268, 447.
Stenocarpin, 258.
Sterility, Dr. More Madden on the treatment of, 297.
Stirling, Dr. William, outlines of practical physiology, *Rev.*, 334.
St. Louis Courier of Medicine, *Rev.*, 422.
Strangulated hernia, Dr. J. Walton Browne on, 24.
Strophanthus, 288.
Suicidal wound of the heart with a pin, Mr. W. Thomson on, 365.
Suicide—in the cocaïn habit, 380—in relation to insanity and life assurance, 433.
Suppositories, zyminised, for rectal feeding, 559.
Suprapubic—cystotomy, Dr. F. T. Heuston on, 533—lithotomy, Mr. Kendal Franks on, 477, 532—Mr. F. Alcock Nixon on, 532.

Sunstroke, bleeding in, 380.
Surgery—recent works on, *Rev.*, 142—of the thyroid gland, by Mr. George Foy, 239, 440.
Surgery, Section of, in the Royal Academy of Medicine in Ireland, 75, 357, 438, 532.
Swan, Mr. R. L., treatment of equino-varus, 438.
Syphilitic rashes, ointment for, 476.

Tabloid triturates, 559.
Tait, Mr. Lawson, flap-splitting in plastic operations, 381.
Temperance Hospital, London, *Rev.*, 421.
Thompson, Mr. Edward, report of the Tyrone County Infirmary for 1886, *Rev.*, 255.
Thomson, Mr. W., foreign body in the œsophagus, 359—suicidal wound of heart with a pin, 365.
Thyroid gland, surgery of the, by Mr. George Foy, 239, 440.
Tibbits, Dr. Herbert, medical galvanism, *Rev.*, 428.
Tobin, Mr. Richard, infantile paralysis, 262.
Tolerance of drugs, 380.
Toothache remedy, 192.
Transactions—of the New York State Medical Association for 1886, *Rev.*, 248—Royal Academy of Medicine in Ireland, 75, 172, 259, 353, 438, 521; *Rev.*, 329—Association of American Physicians, *Rev.*, 253.
Treatment, Cassell's Yearbook of, *Rev.*, 343.
Trephining in brain disease, 75.
Triturates, tabloid, 559.
Tubal pregnancy, ruptured, 347.
Tuberculosis, treatment of, 94.
Tumours, mammary, treatment of, Mr. John Fagan on, 13.
Typhoid—fever, treatment of, 369—ulcer, abdominal section for perforated, 556.
Tyrone County Infirmary, report for 1886, *Rev.*, 255.
Tweedy, Dr. H. C., report on forensic medicine, 430.

United States, Dr. Billings' report on the mortality and vital statistics of the, *Rev.*, 504.
Urethra, physics of male, 437.
Urethrotomy, external, with retrograde catherisation, 258.
Ustilagin, 379.
Uterine hæmorrhage from cystic ovary, Dr. M'Mordie on, 354.
Uterus—treatment of retroflection of the, with adhesions, 351—vaginal extirpation of, Dr. A. V. Macan on, 526.

Vaccinia and variola, works on, *Rev.*, 52.
Vaginal—hysterectomy, 349—extirpation of uterus, Dr. Macan on, 526.
Version and extraction, 167.
Vertebral artery, ligature of the, 74.
Vesical—suture, Mr. Kendal Franks on, 477—tumour removed by suprapubic cystotomy, Dr. F. T. Heuston on, 533.
Virginity, hymen as a proof of, Dr. Kinkead on, 521.
Viscum album, 474.
Vision, changes in the field of, in menstruation, 73.
Vital statistics, 86, 181, 278, 370, 465, 545.

Walsham, Mr. W. J., surgery, *Rev.*, 143.
Watts' Dictionary of Chemistry, *Rev.*, 501.
Weather, works on the, *Rev.*, 147.
Whooping-cough, immediate cure of, 85.
Williams, Dr. C. J. B., and Dr. C. Theodore, on pulmonary consumption, *Rev.*, 316.
Women, diseases of, Mr. A. J. Horne's report on, 167, 347.
Woodhall Spa, Lincolnshire, 289.
Works on—vaccinia and variola, *Rev.*, 52—animal alkaloids, *Rev.*, 47—surgery, *Rev.*, 142—meteorology, *Rev.*, 147—epidemics, *Rev.*, 163.
Wright, Dr. W. M., case of lymphadenoma, 81, 106.
Writers' cramp, analysis of cases of, 557.

Yearbook of treatment for 1888, *Rev.*, 343.
Yeo, Dr. Gerald F., manual of physiology, *Rev.*, 160.

Zealand, New, Medical Journal, *Rev.*, 245.
Zoster, cocaïn in, 380.
Zyminised suppositories for rectal feeding, 559.

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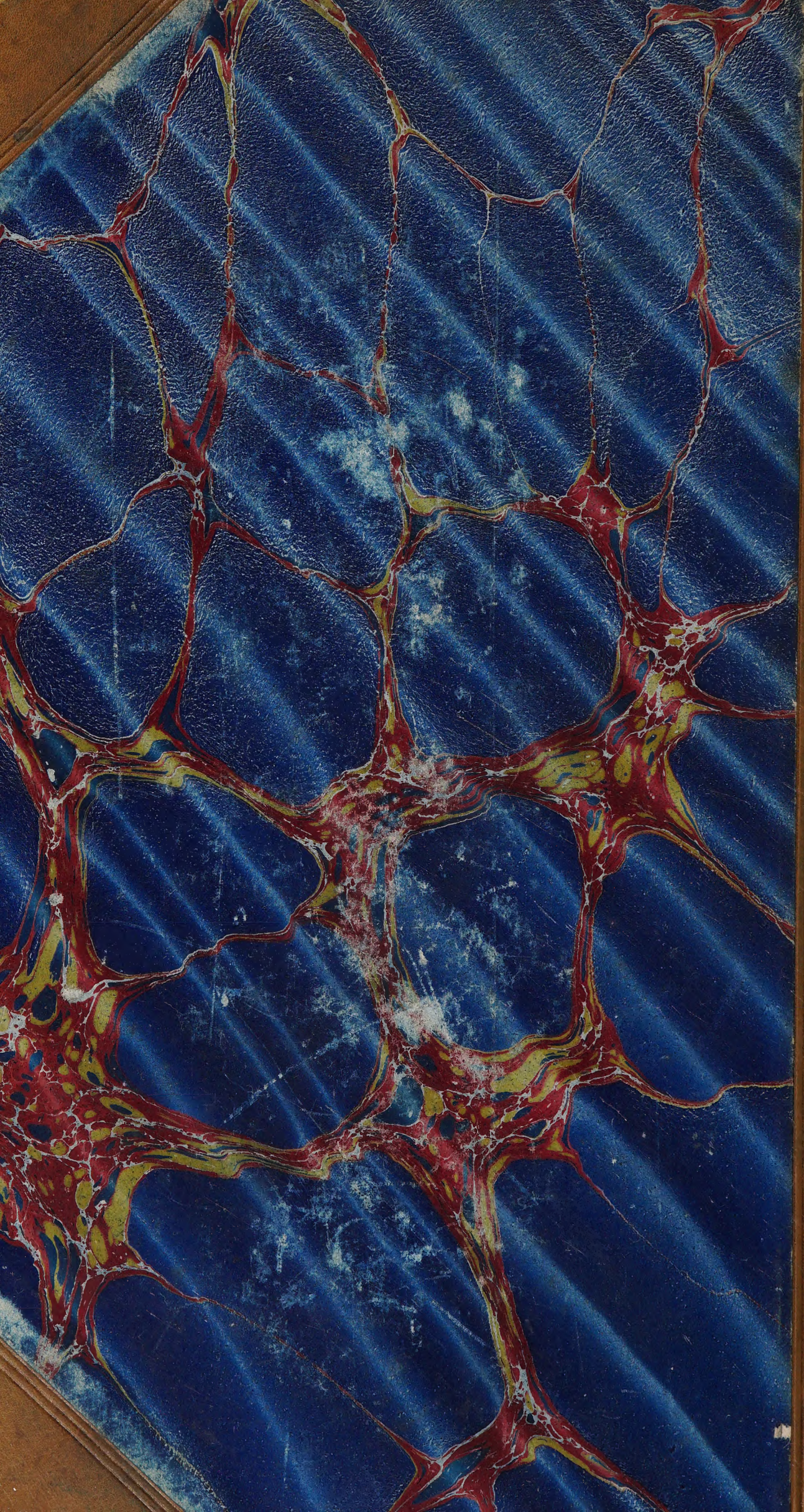
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